

ACTIVITIES OF JINR GOVERNING AND ADVISORY BODIES

SESSION OF THE JINR COMMITTEE OF PLENIPOTENTIARIES

A regular session of the Committee of Plenipotentiaries of the Governments of the JINR Member States was held in Dubna on 17–18 March.

The Plenipotentiary of the Government of the Russian Federation to JINR, RF Minister of Science, Education and Technology A. Fursenko was elected Chairman of the Committee of Plenipotentiaries (CP) till the next session. On behalf of RF Minister of Science, Education and Technology A. Fursenko, this session was chaired by Head of the RF Federal Agency on Science and Innovations S. Mazurenko.

The CP took note of the report «Implementation of the Recommendations of the JINR Scientific Council and of the Decisions of the JINR Committee of Plenipotentiaries, JINR's Activity in 2004 and Plans for 2005» presented by JINR Director V. Kadyshevsky.

The CP approved the activity of the JINR Directorate during 1992–2004 aimed at the preservation and development of the Joint Institute for Nuclear Research as a world centre of fundamental and applied research and at the education of highly qualified personnel. The Committee noted the growing role of JINR in the international cooperation among scientists, and its most important contribution — along with the European Organization for Nuclear Research (CERN) — to bringing nations together in the area of the «peaceful atom» research.

The CP approved the activity of the Institute Directorate on the implementation of the JINR Plan of Research and International Cooperation in 2004, on the realization of collaborative research programmes with the Member States, and on the involvement of new scientific partners in JINR. The CP acknowledged the achievements of the Institute's staff in the

implementation of the scientific programme, in particular:

- the achievement of a record intensity of the ${}^6\text{He}$ beam at the source of radioactive nuclei being constructed at FLNR (DRIBs project);
- the construction and commissioning of the new movable reflector at the IBR-2 reactor, which is already successfully operated at this reactor and, what is essential, will be exploited at the future modernized reactor IBR-2M;
- the production of an accelerated ${}^{12}\text{C}$ ion beam at the Nuclotron, which enhances the capabilities of JINR in the field of hadron therapy of cancer;
- the first experiments on the chemical identification of the element *dubnium* as the end product of the consecutive alpha-decay chain of element 115, produced in the reaction ${}^{48}\text{Ca} + {}^{243}\text{Am}$;
- the new results in the *CP*-violation studies obtained in the joint NA48 experiment at CERN;
- the successful assembly and tests of systems of the ATLAS, CMS and ALICE detectors at the LHC;
- the successful implementation of the JINR Educational Programme in close collaboration with Member States, which contributes to the education of young people inclined to creative labour and to an inflow of scientific personnel into JINR and its member-state institutions.

The CP approved the recommendations of the 96th and 97th sessions of the JINR Scientific Council and the JINR Topical Plan of Research and International Cooperation for 2005. The Directorate was commissioned to give funding in 2005 to the priority activities as recommended at the 97th session of the Scientific Council, in

compliance with the «Programme of JINR's Scientific Research and Development for 2003–2009».

The CP supported the Directorate's activity on the concentration of the financial and human resources on the most important directions of research, on the optimization of the Institute's staff employment, and on the recruitment of young scientists in accordance with the Regulation for the JINR Personnel and with the legislation of the Russian Federation.

The CP supported the recommendation given at the 97th session of the Scientific Council on the reorganization of the Division of Radiation and Radiobiological Research into a Laboratory of Radiation Biology. The Institute Directorate was requested to present a detailed report on this issue at the 98th session of the Scientific Council in June 2005.

The Plenipotentiaries agreed with the plan of the preparation for the celebration of the 50th anniversary of JINR and approved the proposal to set up an organizing committee for the preparation of this celebration, headed by the Plenipotentiary of the Russian Federation, A. Fursenko.

Based on the report «JINR's Financial Activity in 2004 and Plan for 2005–2006» presented by JINR Assistant Director for Economic and Financial Issues V. Katrasev, the CP took note of the information on the execution of the JINR budget in 2004: US\$ 34 319.9 thousand in expenditure and US\$ 36 454.6 thousand in income. Also noted were the positive tendencies in the implementation of the first stage of the Programme of restructuring the debts and reforming the system of calculation and payments of Member States' contributions for the years 2004–2010.

The CP approved the JINR budget for 2005 with the total expenditure amounting to US\$ 37.776 million, as well as the sums of the Member States' contributions for 2005.

The estimate of the JINR budget for 2006 in income and expenditure was set by the CP to be US\$ 37.8 million. Also fixed were the sums of the Member States' contributions for 2006.

The Plenipotentiaries continued signing the revised texts of the basic documents, which include amendments to the Institute's Charter and Financial Protocol. Based on their powers from the governments of the Member States, the Plenipotentiaries should sign these documents before the CP next session in March 2006.

SESSIONS OF THE JINR SCIENTIFIC COUNCIL

The 97th session of the JINR Scientific Council, chaired by JINR Director V. Kadyshevsky, took place in Dubna on 20–21 January.

At the session, Academician V. Kadyshevsky presented a report on the implementation of the recommendations made at the 95th and 96th sessions of the

Based on the report, presented by Chairman of the Finance Committee A. Volodin, on the Committee's meeting held on 16–17 February 2005, the CP approved the Protocol of this meeting and the Directorate's report on the execution of the JINR budget in 2003 with expenditure of US\$ 30 753.0 thousand, and with the summary account as of 1 January 2004 being US\$ 195 300.0 thousand.

Based on the report of Academician V. Matveev, chairman of the committee for the election of the JINR Director, on the programme of the candidate for the position of the JINR Director, A. Sissakian, and after due discussion of the presented material, the CP resolved to approve the work carried out by the election committee, the procedure rules for the election of the JINR Director, as well as the programme presented by the candidate for the Director position A. Sissakian.

By unanimous vote the CP elected Professor A. Sissakian as Director of JINR for a term of five years, in accordance with the Institute's Charter, and approved the procedure rules for inauguration of the newly elected Directorate.

The CP thanked Academician V. Kadyshevsky for his successful work as Director of JINR. The Committee considered it expedient to establish for him the honorary position of a scientific leader of JINR, and recommended that the newly elected Director make the corresponding designation based on the draft regulation proposed by the committee for the election of the JINR Director. The CP also agreed with the inclusion of V. Kadyshevsky in the membership of the JINR Scientific Council in the capacity of an elected member, beginning 1 January 2006 until the completion of the mandate of the present Scientific Council.

Based on the report by JINR Assistant Director for Innovative Development A. Ruzaev «On JINR's Innovation Activity», the CP approved the Directorate's plans of the Institute's participation in the Dubna–Sistema technopark (including development of the JINR «innovation belt»), as well as of the use of the mechanism of private and state partnership for creating a special economic zone in Dubna, in accordance with the legislation of the host country of JINR. The Directorate was requested to inform the Plenipotentiaries periodically on the status of work concerning the development of JINR's innovation activity.

JINR Scientific Council and on the progress in implementing «The Programme of JINR's Scientific Research and Development for 2003–2009».

JINR Vice-Director A. Sissakian informed the Council about the Directorate's proposals concerning the financing of research projects and themes.

The recommendations of the Programme Advisory Committees were reported by the Chairpersons T. Hallman (PAC for Particle Physics), N. Rowley (PAC for Nuclear Physics), and W. Nawrocik (PAC for Condensed Matter Physics).

Proposals concerning the memberships of the PACs were presented by Vice-Director A. Sissakian.

JINR Chief Engineer G. Shirkov reported on the progress in implementation of the programmes «Development of the JINR Engineering and Technical Infrastructure» and «Young Staff at JINR».

A report on the operation of the IBR-2 reactor with the new reflector was presented by the Scientific Leader of the IBR-2 Reactor Complex, V. Aksenov.

JINR Chief Scientific Secretary V. Zhabitsky informed the Council about the Jury's recommendations on the JINR prizes for 2004. The awarding of the 2004 B. Pontecorvo Prize took place at the session; the laureate delivered a talk on the subject of his research.

The following scientific reports were presented at the session: «Evidence for the Existence of the Quark–Gluon Plasma at RHIC» by T. Hallman, «Unitarity of the Cabibbo–Kobayashi–Maskawa Matrix and Latest Results of the NA48 Experiments» by E. Gudkovski, «The Facility for Antiproton and Ion Research (FAIR) at GSI» by H. Gutbrod, and «Chemical Identification of Db as a Decay Product of Element 115 in the Reaction $^{48}\text{Ca} + ^{243}\text{Am}$ » by S. Dmitriev.

The Scientific Council took note of the comprehensive report, presented by JINR Director V. Kadyshchewsky, on the implementation of the recommendations made at the 95th and 96th sessions of the Scientific Council and on progress in implementing «The Programme of JINR's Scientific Research and Development for 2003–2009» and recognized the significant scientific accomplishments of JINR scientists in 2004 in the fields of particle physics, nuclear physics, and condensed matter physics.

The Scientific Council noted that due to several important scientific duties of V. Kekelidze, Director of the Laboratory of Particle Physics (LPP), which necessitate his long-term stay at CERN, the JINR Directorate proposed to appoint LPP Deputy Director R. Lednický as Acting Director of this Laboratory from 1 February 2005 to 31 January 2006. The Scientific Council agreed to this proposal.

The Scientific Council was informed by the JINR Directorate that it was considering the reorganization of the Division of Radiation and Radiobiological Research into a Laboratory of Radiation Biology. The Scientific Council supported this idea and looked forward to a detailed report concerning this reorganization at a future session.

The Scientific Council was informed by JINR Vice-Director A. Sissakian about the Directorate's recommendations concerning the future financing of research projects and themes and the Directorate's plan to concentrate the financial and human resources on the most important directions of research. The Scientific Council

supported the Directorate's plan, together with the PACs and the internal scientific councils of JINR and its laboratories, to review, within one year and with well-defined criteria, the Institute's research programme with a view to stopping projects of lower scientific impact, including first-priority activities.

Specifically, in order to prepare a strategic plan for the Institute, the Scientific Council suggested that the three chairpersons of the PACs, together with the JINR Directorate, develop a road map for the coming 10 years. This close collaboration will define the main lines of research and scientific infrastructure, including the budget development for each field of activity. The results of this process should be presented to the Scientific Council for discussion, possible amendments and approval. Once approved, the road map should serve the Directorate in its strategic planning and the PACs in their recommendations concerning priorities. The road map should be updated at least every three years by the Directorate, the PACs and the Scientific Council. The Council expected a first presentation about the road map at its next session in June 2005.

Emphasizing that fundamental scientific research integrated with educational programme activities remains the core mission of JINR, the Scientific Council strongly supported the proposal for an intensive effort to create an «innovation belt» around the Institute. Together with its main purpose — commercial high-technology developments, it should promote the economic conditions for science at JINR and solve a number of social problems for its staff. The Council looked forward to being informed, at its future sessions, about the organization of this activity, as well as about the transfer of intellectual property rights.

The Scientific Council took note of the report, presented by JINR Chief Engineer G. Shirkov, «Progress of Implementation of the Programmes *Development of the JINR Engineering and Technical Infrastructure* and *Young Staff at JINR*», which are supplements to the Institute's 7-year Scientific Programme. The Scientific Council emphasized again the importance of these issues for the future of JINR and would appreciate further progress reports at its future sessions.

Noting that the United Nations declared 2005 to be World Year of Physics, the Scientific Council urged JINR to participate fully in this event.

The Scientific Council took note of the reports presented by the JINR Director and by the PAC Chairpersons, and endorsed «The JINR Topical Plan for Research and International Cooperation in 2005».

Taking into account the proposals of the JINR Directorate and the recommendations of the PACs, the Scientific Council endorsed the following priority activities in 2005 on which financial and manpower resources should be focused:

In-House Facilities:

- operation and development of the Nuclotron accelerator complex, obtaining of a wider range of

GOVERNING AND ADVISORY BODIES OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH

COMMITTEE OF PLENIPOTENTIARIES OF THE JINR MEMBER STATES

Armenia	H. A. Vartapetian	Moldova	J. Tiginianu
Azerbaijan	M. Kerimov	Mongolia	Ts. Ganzog
Belarus	V. I. Nedilko	Poland	A. Hryniewicz
Bulgaria	S. Tsochev	Romania	N. Zamfir
Cuba	D. Codorniu	Russia	A. A. Fursenko
Czech Republic	R. Mach	Slovak Republic	S. Dubnička
Georgia	A. N. Tavkhelidze	Ukraine	V. S. Stognij
Kazakhstan	K. K. Kadyrzhanov	Uzbekistan	B. S. Yuldashev
D. P. Republic of Korea	Li Je Sen	Vietnam	Nguyen Van Hieu

Finance Committee

One delegate
from each Member State

SCIENTIFIC COUNCIL

Chairman: V. G. Kadyshevsky

Scientific Secretary: V. M. Zhabitsky

I. Antoniou	Greece	M. V. Kovalchuk	Russia	G. Piragino	Italy
A. Antonov	Bulgaria	F. Lehar	France	S. K. Rakhmanov	Belarus
Ts. Baatar	Mongolia	A. A. Logunov	Russia	J. Ružička	Slovak Republic
A. Budzanowski	Poland	M. Mateev	Bulgaria	V. Sahni	India
M. Budzynski	Poland	V. A. Matveev	Russia	Š. Šaro	Slovak Republic
G. D. Cata	Romania	G. van Middelkoop	Netherlands	N. M. Shumeiko	Belarus
Chen Hesheng	China	R. Mir-Kasimov	Azerbaijan	A. N. Sissakian	Russia
A. Dujsebaev	Kazakhstan	T. M. Muminov	Uzbekistan	A. N. Skrinsky	Russia
D. Ellis	Switzerland	Yu. Musakhanov	Uzbekistan	R. Sosnowski	Poland
A. Hryniewicz	Poland	D. L. Nagy	Hungary	P. Spillantini	Italy
Hwan Sok Hwa	D. P. Republic of Korea	Nguyen Manh Shat	Vietnam	G. Stratan	Romania
J. Janik	Poland	Nguyen Van Hieu	Vietnam	A. N. Tavkhelidze	Georgia
V. G. Kantser	Moldova	V. N. Okolovich	Kazakhstan	A. Wagner	Germany
N. S. Kazak	Belarus	Yu. A. Osipian	Russia	I. Wilhelm	Czech Republic
G. Khuukhenkhuu	Mongolia	B. Peyaud	France	G. M. Zinoviev	Ukraine

Programme Advisory Committee for Particle Physics

Chairperson: T. Hallman (USA)
Scientific Secretary: Yu. A. Gornushkin

Programme Advisory Committee for Nuclear Physics

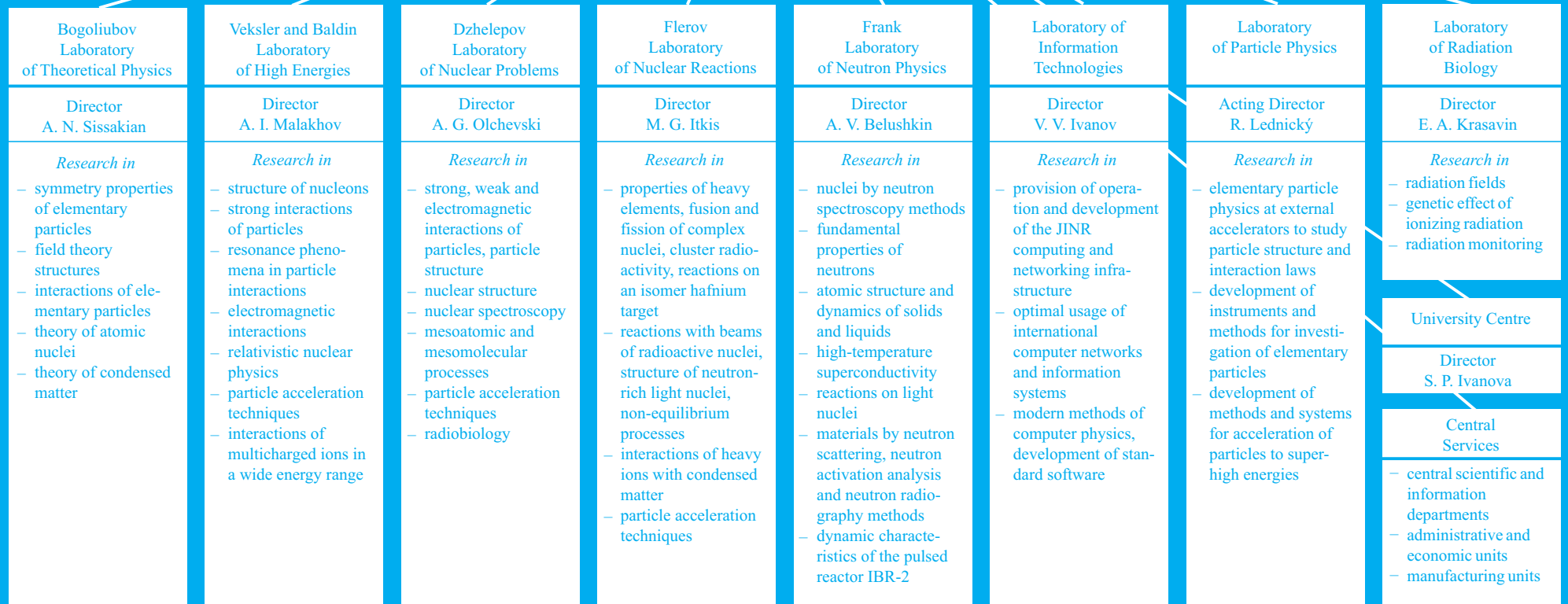
Chairperson: N. Rowley (France)
Scientific Secretary: N. K. Skobelev

Programme Advisory Committee for Condensed Matter Physics

Chairperson: W. Nawrocik (Poland)
Scientific Secretary: S. I. Tyutyunnikov

INTERNAL ORGANIZATION OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH

DIRECTORATE
Director V. G. Kadyshevsky
Vice-Director A. N. Sissakian
Vice-Director Ts. Vylov
Chief Scientific Secretary V. M. Zhabitsky
Chief Engineer G. D. Shirkov



- accelerated nuclei, improvement of the beam extraction system; acceleration of deuterons up to the maximum energy of 6 GeV/nucleon and the installation of a polarized ion source for increasing the intensity of deuterons up to 10^{10} per cycle;
- modernization of the IBR-2 reactor according to the schedule of activities approved by the agreement between JINR and the Russian Agency for Atomic Energy;
- reconstruction of the U400 accelerator, implementation of work on the realization of the Dubna Radioactive Ion Beams (DRIBs) project;
- dismantling of the IBR-30 reactor;
- further development of JINR's telecommunication links, networking, computing and information infrastructure, including Grid technologies.

Ongoing Research Programmes and Projects:

- theoretical studies in challenging issues of modern mathematical physics, particle physics, nuclear physics, condensed matter physics, and computational mathematics and physics, with a view to supporting experimental work at JINR and participating laboratories;
- continued participation in frontier experiments aimed at studying the fundamental properties of elementary particles and their interactions; study of rare, weak processes aimed at verification of the Standard Model of particle interactions and the search for new physics phenomena beyond the Standard Model; precise measurement of direct CP violation; studies of nucleon structure and thorough investigations of the nature and properties of the neutrino at high, low and intermediate energies, participation in high-energy physics experiments at accelerator facilities at IHEP (Protvino), CERN, DESY, BNL and FNAL;
- participation in construction of accelerator subsystems for the LHC, as well as development of promising accelerator technologies;
- continuation of relativistic nuclear interaction studies focused on the search for manifestations of quark and gluon degrees of freedom in nuclei and on properties of nuclear matter at high energies, as well as studies of the spin structure of the lightest nuclei; in-house experiments mainly at the Nuclotron, as well as experiments at the accelerators of BNL (RHIC), GSI (SIS) and RIKEN;
- experiments focusing on the physical and chemical studies of superheavy elements together with their mass identification using the MASHA mass analyzer, on-line gamma spectroscopy of heavy nuclei; experiments with radioactive ion beams;
- condensed matter studies by neutron scattering; research and development of spectrometers, detectors, sample environment systems and data acquisition systems for the IBR-2 complex;
- investigation of the effects of ionizing radiation on biological objects; studies and practical work

in the field of cancer treatment at the Phasotron and at the proposed new beamline at the Nuclotron, with dedicated financial support to be given mainly from nonbudgetary sources. The Council reiterated the need for coordination of activities in biomedical physics;

- development of the JINR Educational Programme, including special-purpose training of specialists for the Member States, the «Dubna International Advanced School of Theoretical Physics» and the summer student practical courses in JINR's fields of research.

The Scientific Council urged the FLNP and JINR Directorates to investigate whether a realistic new plan of investment for the IREN project is possible, as already requested by the PAC for Nuclear Physics at its 20th and 21st meetings and reiterated by the Scientific Council at its 96th session. The conclusions of this investigation should be presented to a meeting of the PAC for Nuclear Physics in 2005.

The Scientific Council concurred with the recommendations made by the PACs at their November 2004 meetings as reported at this session by Chairpersons T. Hallman, N. Rowley, and W. Nawrocik.

Particle Physics Issues. The Scientific Council endorsed the main lines of the JINR Programme of Particle and Relativistic Nuclear Physics Research proposed by the laboratories for the period 2005–2007. It appreciated the intention of the PAC to review further this programme and reconsider the priorities of the projects and themes for 2006–2008 within one year, and looked forward to the results of this effort.

The Scientific Council supported the recommendations of the PAC on the new projects (addendum to the project DIRAC and «Search and Study of Eta-Mesonic Nuclei in pA Reactions at the Nuclotron»), on the continuation of the current activities beyond 2004, and on the closure of two projects as outlined in the PAC report.

The Council supported the PAC's recommendation that the movable polarized target be implemented as soon as possible.

Nuclear Physics Issues. The Scientific Council congratulated the Flerov Laboratory on the chemical identification of Db as the end product of an α -decay chain emanating from element $Z = 115$. It recommended continuation, with first priority, of the physical and chemical studies of superheavy elements, and the important determination of atomic masses using the MASHA mass analyzer. The Scientific Council noted the successful implementation of focal-plane γ -ray spectroscopy of very heavy nuclei and encouraged further experiments and possible future developments in this field. The first complete exploitation (in December 2004) of DRIBs Phase I (light radioactive ion beams) using a post-accelerated ${}^6\text{He}$ beam was noted with great satisfaction.

The Scientific Council highlighted the results obtained in nucleus–neutrino angular correlation measure-

ments of β decay and electron and muon capture by various atomic nuclei (ANCOR project), and on the $p + d \rightarrow (pp) + n$ reaction in the energy range 0.5–2.0 GeV observed at COSY (Jülich) using the ANKE spectrometer. It recommended continuation of both of these projects, with first priority, within the framework of the DLNP programme of low- and intermediate-energy physics.

The extensive research programme of FLNP was noted. The decommissioning of the IBR-30 reactor should be completed with urgency, irrespective of the status of the IREN project, whose future should be decided by the Institute and Laboratory managements before the end of 2005.

Condensed Matter Physics Issues. The Scientific Council reiterated the high priority of the modernization of the IBR-2 reactor for scientific research in condensed matter physics and life sciences.

The Scientific Council was pleased to note that in 2004 the financial support of Rosatom for the IBR-2 modernization was contributed fully and on time. JINR also contributed US\$ 348 thousand to this activity. This exceeds the planned amount and partially compensates the debt accumulated during 2000–2002.

The Scientific Council congratulated the staff of the Frank Laboratory of Neutron Physics on starting, on 13 September 2004, the scheduled work for physics experiments at the reactor's peak power 1.5 MW.

The Scientific Council supported the R&D programme for the development of the neutron moderator complex for the future modernized reactor IBR-2M. A working group of instrument and moderator experts was encouraged by the PAC to ensure, during the IBR-2 shut-down period, the optimization of neutron extraction from the moderator system to each instrument.

The Scientific Council appreciated the realization of the first steps of the new organizational system for users of the IBR-2 reactor, and recommended that the FLNP Directorate do their utmost to attract new users.

Common Issues. Taking into account the financial situation at JINR, the Scientific Council concurred with the Directorate and the PACs that first-priority status be set for research activities for a one-year period only, beginning from the year 2005, pending the results of the future review of the whole of the Institute activities.

The Scientific Council endorsed the recommendations of the three PACs on the opening the new theme «Mathematical Support of Experimental and Theoretical Studies Conducted by JINR» proposed by the Laboratory of Information Technologies.

The Scientific Council noted the success of the physics practical courses for Member-State students held by the University Centre from 29 June to 29 July 2004 and of several schools for young scientists held in 2004 within the framework of the project «Dubna International Advanced School of Theoretical Physics». These activities within the Institute's Educational Programme are appreciated and should be clearly reflected in the budget.

Upon proposal by the JINR Directorate, the Scientific Council appointed A. Ceccucci (CERN, Geneva, Switzerland) and V. Savrin (SINP, Moscow, Russia) as new members of the PAC for Particle Physics, and re-appointed T. Hallman as Chairperson of this PAC until June 2007.

The Scientific Council thanked Professors N. Tyurin and R. Voss for their most successful work as members of the PAC for Particle Physics.

The Scientific Council confirmed the mandates of the PACs with their present memberships until June 2007 and looked forward to the rotation of PAC members as stipulated by the Regulation for the JINR PACs.

The Scientific Council took note of the status report «JINR–CERN Cooperation» presented by JINR Vice-Director A. Sissakian and heard with interest the progress reports on JINR's participation in the preparation of the ATLAS, CMS, ALICE detectors and of the dedicated physics programmes, presented by JINR group leaders N. Russakovich, I. Golutvin, and A. Vodopianov. The Council was pleased to note the successful implementation of the obligations undertaken by JINR for these instrumentation facilities. It welcomed the idea, expressed by Professor N. Russakovich, of organizing a regular framework of the JINR groups involved in the ATLAS, CMS and ALICE activities for the physics programme at the LHC.

The Scientific Council took note of the report «IBR-2 Reactor with the New Reflector» presented by the Scientific Leader of the IBR-2 Reactor Complex, V. Aksenov, and congratulated the staff of the Frank Laboratory of Neutron Physics on the successful completion of the important stage of the reactor's modernization — the installation of the new movable reflector.

The Scientific Council approved the Jury's recommendations on the JINR prizes for 2004.

The 98th session of the JINR Scientific Council, chaired by JINR Director V. Kadyshevsky, took place in Dubna on 2–3 June.

At the session, Academician V. Kadyshevsky presented a report on the decisions taken by the JINR Committee of Plenipotentiaries at its meeting held on 17–18 March 2005. Vice-Director A. Sissakian presented the first proposals of the JINR Directorate concerning the strategic plan for the Institute's development («road map»). JINR Chief Engineer G. Shirkov informed the Council on the operation of the JINR basic facilities and on construction of the IREN facility.

The recommendations of the JINR Programme Advisory Committees were reported by T. Hallman (PAC for Particle Physics), N. Janeva (PAC for Nuclear Physics), and by W. Nawrocik (PAC for Condensed Matter Physics). Proposals concerning the memberships of the PACs were presented by Vice-Director A. Sissakian.

The session included a Round Table entitled «JINR's Cooperation with German Research Centres, Universities, Organizations and Foundations in the Field

of Science and Education», at which the following presentations were given: «Status and Prospects of the Cooperation» by A. Sissakian, «Giessen–BLTP–UC Collaboration in Nuclear Physics: Research and Education» by W. Scheid and S. Ivanova, «The Research Opportunities in Germany» by D. Sdvizhkov, «Helmholtz Association and Russia — Strategic Alliance for a Better Future» by B. Heinze, and «Scientific and Educational Programme DIAS-TH» by A. Filippov.

Research in the field of radiation biology at JINR and a plan to reorganize the Division of Radiation and Radiobiological Research (DRRR) into a Laboratory of Radiation Biology were presented by DRRR Head E. Krasavin.

The following scientific reports, dedicated to the World Year of Physics event, were presented: «Synthesis of Superheavy Elements at JINR: New Results and Prospects» by Yu. Oganessian and «Present Status of the Problem of Neutrino Mass and Oscillations» by S. Bilenky.

The Scientific Council noted the information, presented by JINR Director V. Kadyshesky, concerning the decisions taken by the JINR Committee of Plenipotentiaries at its March 2005 session, among them:

- the approval of the activity of the JINR Directorate during 1992–2004 aimed at preserving and developing JINR as a leading world centre of fundamental and applied research and of education of young scientists in the relevant areas of knowledge;
- the approval of the JINR Topical Plan of Research and International Cooperation for 2005 based on the recommendations of the Scientific Council and the PACs;
- the support of the efforts undertaken by the Directorate to concentrate available financial and human resources on the most important directions of research;
- the approval of the Directorate's plans to participate in innovation activities;
- the election of A. Sissakian as the new Director of JINR for a term of five years, in accordance with the Institute's Charter, beginning January 2006.

The Scientific Council thanked Professor V. Kadyshesky for his successful leadership during 13 years as Director of JINR. His contributions to the development of JINR and of its scientific and technological cooperation with research institutions of the Member States and of other countries were highly appreciated.

In response to its previous recommendation, the Scientific Council was informed by Vice-Director A. Sissakian about the first proposals concerning the development of a road map to achieve the strategic goals of the Institute's research programme for the coming 10 years as the next step in the planning process initiated with the current seven-year scientific programme. The Scientific Council endorsed these proposals, as elaborated by the Institute's Directorate and discussed by the

internal scientific councils of JINR and its laboratories as well as at the April meetings of the PACs, and considered them as a good basis for further development.

The Scientific Council recommended continuation of this work and specifically that the road map include the impact of the various themes and projects, their relevance to the interests of the international scientific community, and the assumptions made concerning manpower and funding profiles for the future.

The road map should document a strategic plan to maintain JINR's leading role as a competence cluster in Dubna which is highly attractive for participation of the JINR Member States. The road maps of the Institute laboratories should be also presented at the Scientific Council sessions in order to assess the role to be played by each laboratory.

The Scientific Council invited the JINR Directorate and experts to develop proposals concerning the development of the Institute's future scientific basis, including possible megaprojects such as the International Linear Collider (ILC), which are obviously of great importance for the long-term future of JINR.

The Scientific Council considered that a larger level of funding was needed for achieving the goals of the draft road map as presented. It asked the Committee of Plenipotentiaries to consider the question of increasing the Institute's budget, particularly in view of the inflation in costs and salaries that had not been compensated for many years.

The Scientific Council recommended that the JINR Directorate establish contact with the European Strategic Forum for Research Infrastructures (ESFRI) in order to inform each other regularly about the European and JINR infrastructure road maps in the interest of harmonizing these plans.

The Scientific Council took note of the information on the operation of the JINR basic facilities presented by JINR Chief Engineer G. Shirkov, and appreciated the stable operation of these facilities.

Concerning the construction of the IREN facility, the Scientific Council insisted that all problems with this project must be clarified as soon as possible. At its next meeting, the PAC for Nuclear Physics should discuss IREN construction in the context of a realistic plan of investment, requested by the Scientific Council at the previous session, the necessary human resources, and a realistic scientific programme that takes the contemporary international context into account. The Scientific Council requested a report on the IREN project, based on the conclusion of the PAC, for the next session.

The Scientific Council was informed about the status of Linac 800 (first part of DELSY) and asked the corresponding PACs to discuss (i) how the construction of this linear accelerator would be completed, (ii) what kind of instrumentation, including free-electron lasers, were planned, and (iii) whether these developments had been justified by a sound scientific case that fits within the JINR road map.

The Scientific Council concurred with the recommendations made by the PACs at their April 2005 meetings and reported by Professors T. Hallman, N. Janeva, and W. Nawrocik.

Particle Physics Issues. The Scientific Council was pleased to note the first steps taken to streamline the Programme of Particle Physics Research in order to focus it on the most important physics topics. It concurred with the PAC's recommendations to close 14 activities (themes and projects) as indicated in the PAC report. At its next meeting, the PAC expects to consider, based on the information by the laboratory directors, which projects are suggested to be closed in 2006 and 2007.

The Scientific Council recognized the significant achievement made in developing the Nuclotron accelerator complex during the last few years; in particular, the increase in the energy of accelerated particles, progress towards increasing the intensity of polarized deuterons, and further development of the cryogenic system. The Scientific Council supported the PAC's recommendation concerning the need to prepare a written detailed plan for upgrading the capability of the Nuclotron in the future; for example, for the development of high-intensity heavy-ion beams up to the highest energy provided by the design of the Nuclotron.

The Scientific Council supported the recommendations of the PAC on the new project «Astrophysical Studies in the NUCLEON Space Experiment», on the new theme «Study of e^+e^- Interactions, Linear Collider Physics and Detector», on including R&D study for the preparation of the PAX project as an additional item of the theme «Investigations at the GSI Accelerator Complex», and on the continuation of the current activities beyond 2005.

The Scientific Council looked forward to hearing more details of the linear collider plans discussed by the PAC, and would also like to be informed about plans for neutrino experiments at a future session.

The Scientific Council was pleased to note that the obligations undertaken by JINR for the preparation of the ALICE, ATLAS, and CMS detectors for the experiments at the LHC had been successfully met, and it appreciated the role of the Institute Directorate in achieving this important goal. The Scientific Council would welcome a more active involvement of BLTP theoreticians in the preparation of the research programmes planned at the LHC.

The Scientific Council strongly supported the wish of the PAC to hear at its next meeting a report concerning the software and computing efforts being actively undertaken to allow JINR scientists to produce first scientific results at the time of LHC start-up.

Nuclear Physics Issues. The Scientific Council was pleased to note the recent achievement of the Flerov Laboratory in obtaining two additional events in the $Z = 118$ experiment, and looks forward to successful continuation of the superheavy-element research programme.

The Scientific Council noted that the first experiments carried out at the DRIBs complex had demonstrated a large potential for research with accelerated secondary beams and supported the research programme with ^6He beams with first priority.

The Scientific Council noted the new results obtained in the MUON experiment during the last three years.

The Scientific Council was pleased to note the completion of the design stage of the SAD project, targeted on creating a facility to address important problems of modern nuclear energy production and waste transmutation. It encouraged collaboration between this project and European and other transmutation projects already in progress.

The Scientific Council supported the recommendation on the approval, with highest priority, of the new project GERDA-MAJORANA on the search for neutrinoless double beta decay of ^{76}Ge .

The PALM experiment, aimed at an improved lifetime measurement of parapositronium, should be approved as outlined in the PAC report.

Condensed Matter Physics Issues. The Scientific Council was pleased to note that the full budget required for the modernization of IBR-2 in the period 2004–2005 was provided in a timely way, enabling the completion of the commissioning of the new movable reflector on schedule. The Scientific Council expected that the planned financial support for this activity would continue until the IBR-2 modernization was complete.

The Scientific Council welcomed the rapidly growing activity on the theme «Radiation Effects and Modification of Materials, Radioanalytical and Radioisotopic Investigations at the FLNR Accelerators».

As proposed by the JINR Directorate, the Scientific Council appointed V. Petrov (IMBP, Moscow, Russia) and F. Spurný (NPI, Prague, Czech Republic) as new members of the PAC for Condensed Matter Physics, and S. Hofmann (GSI, Darmstadt, Germany) as new member of the PAC for Nuclear Physics for a term of three years.

The Scientific Council thanked Professors S. Kozubek, G. Münzenberg, and P. Spillantini for their very successful work as members of the PACs for Condensed Matter Physics, for Nuclear Physics, and for Particle Physics, respectively.

The Scientific Council took note of the report on the current and planned research programme in the field of radiation biology presented by E. Krasavin, Head of the Division of Radiation and Radiobiological Research (DRRR), as well as of the intention to reorganize DRRR into a Laboratory of Radiation Biology (LRB). The main goal of this programme is simulation of the effect of heavy charged particle radiation from the Galaxy in experiments at the Nuclotron and studies of the biological effectiveness of the carbon ion beam at the Med-Nuclotron channel with the aim of developing an effective cancer therapy.

Considering the wish of the Russian Academy of Sciences to have a closer cooperation with JINR in the fields of radiation biology and radiation medicine, as expressed in the letter announced by Professor M. Ostrovsky, the Scientific Council invited a corresponding report to be presented at the next session.

The Scientific Council recommended investigating the possibilities for studies in the field of radiation medicine at the existing facilities of JINR and those under construction, including development of apparatus for radiation surgery based on the use of hadron and gamma beams.

The Scientific Council took note of the intention to reorganize DRRR into LRB and encouraged the JINR Directorate to present a documented plan concerning the new laboratory.

The Scientific Council thanked the representatives of JINR and of German research institutions — A. Sissakian, W. Scheid, S. Ivanova, D. Sdvizhkov, B. Heinze, and A. Filippov — for the high quality of their presentations.

The Scientific Council highly appreciated this collaboration, looked forward to its continuation, and would welcome its intensification.

The Scientific Council discussed among others the following topics:

PAC memberships. The Scientific Council asked the JINR Directorate to present information on the rotation of PAC members and on the terms of duties of the current members of the PACs.

Scientific Council procedure. In view of the regulation of the Committee of Plenipotentiaries concerning the Chairman of the Scientific Council, the Scientific

Council recommended the appointment of an executive chairman from a Member State to co-chair the Council.

Young staff at JINR. The Scientific Council would like to hear a progress report on this issue at the next session.

Innovation activity and nonbudgetary funding of projects. The Scientific Council asked the Directorate to present in its report at the next session the information as to (i) which specific innovation activity JINR would pursue, and (ii) what was the impact on the JINR services and resources of the activities supported by nonbudgetary funds, in particular to which extent they cover the related salary, infrastructure and overhead costs.

The Scientific Council endorsed the JINR Directorate's proposals to award the title «Honorary Doctor of JINR» to Professors V. Hajko, T. Kirk, and A. Rumyantsev in recognition of their outstanding contributions to the advancement of science and the education of young scientists, and congratulated them.

The Scientific Council congratulated Professor M. Itkis on receiving the 2005 Humboldt Research Award.

The Scientific Council congratulated Professor A. Sissakian on being awarded the Russian Order of Honour, which was presented to him at this session by the Head of the Russian Federal Agency for Science and Innovations, S. Mazurenko.

According to the JINR Regulations, the Scientific Council announced vacancies of the Director of the Bogoliubov Laboratory of Theoretical Physics and of the Director of the Frank Laboratory of Neutron Physics.

MEETING OF THE JINR FINANCE COMMITTEE

A regular meeting of the JINR Finance Committee was held in Dubna on 16–17 February. It was chaired by A. Volodin, representative of the Russian Federation.

At the meeting, JINR Director V. Kadyshevsky reported on the implementation of the recommendations of the JINR Scientific Council and of the decisions of the Committee of Plenipotentiaries (CP), on JINR's activities in 2004 and plans for 2005. The Finance Committee endorsed the activity of the Institute Directorate on the implementation of the JINR Plan of Research and International Cooperation in 2004, on the realization of collaborative research programmes with the Member States and on the involvement of new scientific partners in JINR. The Committee noted the achievements of the Institute's staff in the implementation of the scientific programme, in particular the chemical identification of the element *dubnium*, the new results in the

CP-violation studies obtained in the joint NA48 experiment at CERN, the successful assembly and tests of systems of the ATLAS, CMS, and ALICE detectors at the LHC. It also noted the progress in developing and upgrading the Institute's basic facilities, in particular the achievement of a record intensity of the ${}^6\text{He}$ beam at the source of radioactive nuclei being constructed at FLNR (DRIBs project), the construction and commissioning of the new movable reflector at the IBR-2 reactor, and the production of an accelerated ${}^{12}\text{C}$ ion beam at the Nuclotron. The Committee specially noted the effective implementation of the JINR Educational Programme, which contributes to an inflow of scientific personnel into JINR and its Member-State institutions.

Based on the information about the work of the Control Commission, presented by A. Hulman, senior official of the Ministry of Finance of the Czech Republic, the Finance Committee endorsed the Directorate's

report for 2003 on the execution of the JINR budget in expenditure amounting to US\$ 30 753.0 thousand, with the summary account as of 1 January 2004 being US\$ 195 300.0 thousand.

The Finance Committee took note of the report «JINR's Financial Activity in 2004 and Plan for 2005–2006», presented by V. Katrasev, and recommended that the CP approve the JINR budget for 2005 with the total expenditure amounting to US\$ 37.776 million.

In view of the current tendency towards the increase in the exchange rate of the Russian rouble against the US dollar, the Finance Committee asked the Plenipotentiary of the Russian Federation to consider the possibility of planning the rouble part of the Russian contri-

bution to the JINR budget for 2006 in Russia's federal budget at the level of the year 2005, with an increase of the amount according to the calculation method foreseen in the federal budget.

The Committee authorized, with powers for one year, the MS-Audit company, registered in Dubna, to review the Institute's financial activity and approved the plan, presented by the Directorate, of the audit review of the financial activity during 2004.

The Finance Committee thanked Professor M. Itkis, Director of the Flerov Laboratory of Nuclear Reactions, for his interesting and informative scientific report «Physics and Chemistry of Superheavy Elements — New Opportunities and Prospects».

MEETINGS OF THE JINR PROGRAMME ADVISORY COMMITTEES

The 23rd meeting of the Programme Advisory Committee for Particle Physics was held on 14–15 April. It was chaired by Professor T. Hallman.

The PAC for Particle Physics took note of the information presented by JINR Vice-Director A. Sissakian on the Resolution of the 97th session of the JINR Scientific Council (January 2005) and on the decisions of the JINR Committee of Plenipotentiaries (March 2005 meeting). The PAC highly appreciated the significant accomplishments of the Institute's scientists in 2004.

The PAC congratulated Professor A. Sissakian on his election as Director of JINR and wished him success in his effort to preserve and strengthen the position of the Institute as an international scientific centre of excellence in which frontier physics research is integrated with the development and application of advanced technologies and with university education.

The PAC paid special attention to questions of the long-term planning of JINR's research activity, to the development of a strategic plan («road map») for the coming 10 years, which should serve the Directorate in its strategic planning and the PACs in their recommendations concerning priorities.

The PAC took note of the reports presented by A. Sorin, Deputy Director of the Bogoliubov Laboratory of Theoretical Physics, A. Malakhov, Director of the Veksler and Baldin Laboratory of High Energies, R. Lednický, Acting Director of the Laboratory of Particle Physics, A. Olchevski, Director of the Dzhelepov Laboratory of Nuclear Problems, and by V. Ivanov, Director of the Laboratory of Information Technologies, and endorsed their proposals on the optimization of the Programme of Particle Physics Research for 2006.

The PAC supported the Institute's efforts towards improving its scientific programme and reducing the number of projects in order to concentrate the use of financial and human resources on the most important

directions of the research. The PAC recommended continuation of this work, and expressed a wish of being informed by the Directors at the next meeting as to which projects are suggested to be closed in 2006 and 2007.

The PAC concurred with the recommendations of the directorates of the laboratories, science and technology councils of the Institute and its laboratories about closing 14 research activities (themes and projects).

The PAC recognized the significant achievements made in developing the Nuclotron accelerator complex during the last few years, namely the increase of the energy of accelerated particles, progress towards increasing the intensity of polarized deuterons, and further development of the cryogenic system which has made it possible to improve the reliability and stability of the superconducting magnetic system, as well as to decrease the electric power consumption. The PAC noted the necessity of written documentation of the detailed plan for upgrading the capability of the Nuclotron in the future, for example, for the development of high-intensity heavy-ion beams up to the full energy provided by the design of the Nuclotron.

The PAC approved proposals for the new projects «Astrophysical Studies in the NUCLEON Space Experiment» and «Study of e^+e^- Interactions, Linear Collider Physics and Detector». It also reviewed written reports on the projects previously approved for completion in 2005.

The PAC took note, with interest, of the programmes of physics studies planned to be carried out by JINR groups in the experiments at the LHC (CERN), RHIC and the Tevatron (USA), as well as of plans to participate in data analysis. The PAC was pleased to note that the obligations undertaken by JINR for the preparation of the ALICE, ATLAS and CMS detectors for the experiments at the LHC were successfully met.

The PAC noted the physics results already obtained with JINR's participation in the STAR and PHENIX experiments at RHIC and in the CDF and D0 experiments at the Tevatron, as well as the essential importance of attracting students and young scientists to the current highly productive phases of these experiments.

The PAC expressed a wish to hear at its next meeting a report concerning the software and computing activities being undertaken to allow JINR scientists to produce first scientific results at the time of the LHC start-up. The PAC recommended that BLTP theoreticians be more actively involved in the preparation of the research programmes planned at the LHC.

The 22nd meeting of the Programme Advisory Committee for Nuclear Physics was held on 21–22 April. It was chaired by Professor N. Rowley.

The PAC was informed on the implementation of recommendations taken at the previous meeting, on the resolution of the 97th session of the JINR Scientific Council (January 2005), and on the decisions of the Committee of Plenipotentiaries (March 2005 meeting). The PAC congratulated Professor A. Sissakian on his election as new Director of JINR and wished him successful leadership of the Institute.

The PAC discussed the road map of strategic goals for the Institute's research programme, heard presentations from the laboratories on the current activities and programmes for 2006, information about the results of first experiments carried out at the DRIBs complex, and the status of the MUON and SAD projects. The PAC considered DLNP proposals of two new projects PALM and GERDA–MAJORANA, took note of a letter of intent to move the Mini-FOBOS detector from FLNR to the IBR-2 reactor and of the information about the development of the «Knowledge Base on Low-Energy Nuclear Physics». Also, three scientific reports were presented at the meeting.

The PAC made the following recommendations on the considered questions:

Road Map: General Considerations. The PAC appreciated the initiative of the JINR Directorate to define a road map of strategic goals for the Institute's research programme. The PAC considered that it was essential to include practical aspects of this programme, in particular financial and manpower resources, in this road map. It is necessary that the impact of the various themes and projects should be highlighted, including the relevance to the interests of the wider international community in general and of the JINR Member States in particular. In this context the provision, maintenance, operation and development of basic facilities is of course an essential element.

Laboratory Presentations. The PAC appreciated the presentations from the laboratories as a review of their current activities and programmes for 2006. However, it felt that in future presentations the strategic goals should be more clearly defined, in terms of the topical basic and applied physics questions to be addressed.

First Experiments with ${}^6\text{He}$ Radioactive Beams at DRIBs. The PAC noted that the first experiments carried out at the DRIBs complex demonstrated a large potential for research with accelerated secondary beams. The presented results of the experiments with ${}^6\text{He}$ beams are of top quality. The PAC recommended that the research programme with ${}^6\text{He}$ beams be continued with first priority.

MUON Project. The PAC noted with interest the new results obtained in the MUON project during the last three years and recommended continuation of this project.

SAD Project. The PAC encouraged collaboration between the SAD project and running European and other transmutation projects aimed at establishing closer connection of JINR with the world scientific transmutation community and making it more attractive for the Member States.

Proposals of New Projects. PALM Project. The PALM experiment aims at an improved lifetime measurement of para-positronium by a factor of two compared with previous experiments. The PAC welcomed and recommended for approval this experiment as an important first step to train the young scientists who made a major contribution to creating the LEPTA facility. The PAC expected, however, that new physics proposals would be formulated in due time.

GERDA–MAJORANA Project. The PAC recognized the fundamental importance of modern neutrino experiments and the internationally acknowledged expertise of DLNP staff in this domain. With this in mind, the PAC recommended for approval the new proposal on the GERDA–MAJORANA project on the search for neutrinoless double beta decay of ${}^{76}\text{Ge}$ with the highest priority. After the latest discoveries of the oscillations in reactor, solar and atmospheric neutrino fluxes, this new type of experiment is an essential next step in neutrino physics, and JINR's participation is deemed to be very important.

Letter of Intent on Mini-FOBOS. The PAC heard a short proposal from D. Kamanin to move the Mini-FOBOS detector from FLNR to the IBR-2 reactor in order to study neutron-induced ternary fission. It proposed that this idea should be discussed in detail at its next meeting.

Development of the «Knowledge Base on Low-Energy Nuclear Physics». The initiative of V. Zagrebayev's team to create a network nuclear physics knowledge base was highly appreciated by the PAC. In particular, the provision of an on-line capability for performing nuclear reactions calculations is unique. The PAC urged the FLNR Directorate to assist in completing and continuously updating this base.

Scientific Reports. The PAC heard with interest three scientific reports: «Resonance States of Heavy Hydrogen and Helium Nuclear Systems: Recent Results Obtained at the ACCULINNA Setup» (by G. Ter-Akopian), «First Results on Fission, Obtained at the n-TOF Facility» (by W. Furman) and «Light Nucleus

Clustering in Fragmentation above 1 A·GeV» (by P. Zarubin).

The 22nd meeting of the Programme Advisory Committee for Condensed Matter Physics was held on 25–26 April. It was chaired by Professor W. Nawrocik.

The PAC Chairperson, W. Nawrocik, presented the implementation of the recommendations of the previous PAC meeting.

JINR Chief Scientific Secretary V. Zhabitsky related the Resolution of the 97th session of the JINR Scientific Council (January 2005) and the decisions of the Committee of Plenipotentiaries (CP) (March 2005 meeting).

The PAC congratulated Professor A. Sissakian, elected as Director of JINR at the CP meeting, and wished him successful leadership of the Institute.

JINR Facilities. JINR Chief Engineer G. Shirkov informed the PAC about the status of the JINR basic facilities, including IBR-2 modernization work.

The PAC was very pleased that the full budget required for the modernization of IBR-2 in the period 2004–2005 was provided in good time, which enabled the commissioning of the new movable reflector to be completed on schedule. It expects that the planned financial support will continue until the modernization is complete.

Scientific Programme of Condensed Matter Physics. The PAC took note of the reports presented by the directorates of the Frank Laboratory of Neutron Physics, Flerov Laboratory of Nuclear Reactions, Bogoliubov Laboratory of Theoretical Physics, and of the Division of Radiation and Radiobiological Research, and endorsed their proposals on the adjustment of the Scientific Programme of Condensed Matter Physics for 2006 in accordance with the available financial and human resources.

The PAC noted with interest the first proposals for the Institute's road map in condensed matter science presented by laboratory directorates at this PAC meeting, and considered them as a good basis for further elaboration.

The PAC was pleased to hear the first proposals for the next 10 years presented by FLNP Director A. Belushkin. For the elaboration of the road map it stressed the importance of taking into account the long stop of the IBR-2 reactor scheduled from 2007 and the emergence at world level of comparable pulsed sources, which implies taking advantage of the long pulse specificity of IBR-2.

FLNR Deputy Director S. Dmitriev presented a status report on the theme «Radiation Effects and Modification of Materials, Radioanalytical and Radioisotopic Investigations at the FLNR Accelerators». The PAC welcomed the rapidly growing activity in this field.

Considering the complementarity of theoretical and experimental research in the field of condensed matter physics to be an essential factor of scientific progress, the PAC supported the new structure of the theme «The-

ory of Condensed Matter», presented by BLTP Sector Chief V. Priezzhev.

The PAC was informed by E. Krasavin, Head of the Division of Radiation and Radiobiological Research (DRRR), about the adjustment of the scientific programme of DRRR for 2006 and highly appreciated the presented scientific plan. However, the PAC felt that the financial resources of these activities had not been clarified yet and suggested that the JINR Directorate should find additional JINR resources for radiation and radiobiological research during the planned process of reorganization of DRRR into a Laboratory of Radiation Biology.

IBR-2 Instrumentation. The PAC appreciated the important report, presented by FLNP Sector Chief A. Balagurov additionally at this meeting on the request of the PAC members, who answered the questions: How does the new movable reflector affect the parameters of spectrometers at IBR-2? and What developments have been realized at spectrometers during IBR-2 shut-down?

The PAC wished to receive at a future meeting a status overview of the instruments, identifying their performance in accordance with the scientific programme, and a progress report on the cold moderator project and neutron extraction optics.

IBR-2 Users' Policy. FLNP Deputy Director N. Popa presented information about the IBR-2 users' policy. The PAC found satisfactory the execution of the first six of seven stages of the new programme for the users of the IBR-2 reactor and recommended that FLNP increase its effort to attract new users mainly for the instruments with smaller demand.

Scientific Reports. The PAC noted with interest the reports «Research of Planetary Surfaces by Albedo Neutrons», presented by G. Timoshenko (DRRR), and «What Can We Learn about Lipid Vesicle Structure from the Small-Angle Neutron Scattering Experiment?», presented by M. Kiselev (FLNP).

The 23rd meeting of the Programme Advisory Committee for Nuclear Physics was held on 7–8 November. It was chaired by Professor N. Janeva.

The PAC heard a report on the implementation of the recommendations of the previous meeting and information on the Resolution of the 98th session of the JINR Scientific Council (June 2005).

The PAC heard proposals for the JINR Programme of Nuclear Physics Research for 2006–2008 presented by laboratories and discussed the road map of strategic goals for the Institute research programme in the field of nuclear physics. Reports on the future of the IREN project, on the status of the SAD project, information about the 3rd Sandanski Meeting and the Summer Student School in Dubna, and a scientific report were presented at the meeting.

The PAC made the following recommendations on the considered questions.

Programme of Nuclear Physics Research for 2006–2008. The PAC took note of the proposals for the JINR Programme of Nuclear Physics Research for 2006–2008 presented by laboratories, in which the available resources would be concentrated on the most important directions of research.

Bogoliubov Laboratory of Theoretical Physics. The main goals of the programme for 2006–2008 are to study the properties of nuclei near drip lines and investigations of the structure of superheavy nuclei; to study the dynamics of nuclear reactions and mechanisms of production of exotic nuclides; to investigate the fundamental properties of exotic few-body nuclear, atomic and molecular systems; to study the behaviour of nuclear matter and its phase transitions at high temperature and density; to elaborate new methods of relativistic nuclear physics and apply them to analysis of subnuclear and spin effects in few-nucleon systems.

The PAC recommended adequate funding of the theme «Nuclear Theory» with first priority in 2006.

Dzhelepov Laboratory of Nuclear Problems. The PAC noted that the efforts in searches for double beta decay aimed at greatly enlarged lifetime limits are impressive and should be pursued vigorously during the next three years. The activities within the themes «Investigation of Fundamental Interactions in Nuclei at Low Energies», «Nucleus and Particle Interactions at Intermediate Energies», and «Development of the JINR Phasotron for Fundamental and Applied Research» should be continued with first priority in 2006.

Flerov Laboratory of Nuclear Reactions. The PAC was impressed by the research programme outlined for FLNR for the years 2006–2008. The programme is focused on major research areas: the synthesis of superheavy elements including reaction studies, the investigation of their nuclear and chemical properties, studies of reaction mechanisms, gamma spectroscopy of the heaviest elements, the production and structure studies of exotic light radioactive nuclei. The themes «Development and Construction of an Accelerator Complex for Producing Radioactive Ion Beams (project DRIBs)», «Synthesis of New Nuclei and Study of Nuclear Properties and Heavy-Ion Reaction Mechanisms», and «Development of the FLNR Cyclotron Complex for Producing Intense Beams of Accelerated Ions of Stable and Radioactive Isotopes» should be continued in 2006 with first priority.

The upgrade of the U400M–U400 accelerator complex is essential for the challenging research programme of FLNR and for maintaining its leadership in the field. The acceleration of low-energy beams at U400M should be realized with particular urgency. These would allow an uninterrupted running of experiments during the modernization of U400.

Frank Laboratory of Neutron Physics. The PAC heard with interest the proposed FLNP scientific programme on neutron nuclear physics, containing the following priorities in fundamental research: experiments

with polarized neutrons and nuclei, fundamental properties of the neutron, UCN physics, nuclear fission, and nuclear structure. The PAC approved the FLNP research activity at JINR and external neutron sources, which give valuable scientific results and permit one to maintain the high expertise of this Laboratory's scientists. The theme «Nuclear Physics with Neutrons» should be continued with first priority in 2006.

Laboratory of Information Technologies. The PAC noted with satisfaction the present status of the networking system at JINR worked out by LIT and appreciated the future plans for making the communication system more effective. The mathematical support of experimental and theoretical studies at JINR, provided by the Laboratory, should be continued and further strengthened. The PAC recommended continuation of the work performed at LIT within the direction «Networks, Computing, Computational Physics» on the themes «Information, Computer and Network Support of JINR's Activity» and «Mathematical Support of Experimental and Theoretical Studies Conducted by JINR» with first priority in 2006.

Draft Road Map in the Field of Nuclear Physics. The PAC heard with interest the summary of the main lines of research planned by nuclear physics groups in corresponding laboratories for the next three years, and accepted this presentation as an initial step in the road map aimed at a long range of 10–15 years.

The PAC recommended that all JINR nuclear physics groups discuss and formulate in a common effort the strategic lines of research in nuclear physics in 15 years' perspective.

IREN Project. The PAC heard the FLNP Directorate's information concerning the start-up of dismantling IBR-30. The PAC agreed with the decision of the JINR Directorate concerning reducing the full-scale IREN project to its first stage (LINAC with a nonmultiplying target).

The PAC recommended extension of the theme «Construction of the IREN Facility (IREN Project)» for one year with first priority with the following tasks: the completion of dismantling IBR-30 and complex tests of the accelerator systems. The final goal is to create by the end of 2007 the 1st stage of IREN, including the electron accelerator, the stand for applied research, and the neutron-producing target.

SAD Project. The PAC welcomed the plans for creating an international facility at Dubna for addressing important problems of modern nuclear energy production and waste transmutation. The PAC regards SAD as a project establishing closer connection of JINR with the world scientific transmutation community.

The PAC encouraged collaboration between the SAD project and the Integrated Project EUROTRANS with the support of the International Scientific and Technical Centre (ISTC). For a project of this magnitude, special funds should be sought from national energy agencies. The PAC recommended that the FLNP and DLNP directorates consider the possibility of including

SAD in the JINR Topical Plan of Research as a separate theme of first priority.

Information on Conferences. The PAC took note of the information about the 3rd Sandanski Coordination Meeting on Nuclear Science (Bulgaria, 26–30 September 2005) and about the III International Summer Student School on Nuclear Physics Methods and Accelerators in Biology and Medicine (Dubna, 30 June – 11 July 2005). The PAC stressed the importance of the educational programme being developed by the JINR University Centre.

The PAC heard with interest the report «Liquid-Fog and Liquid-Gas Phase Transitions of Hot Nuclei» presented by V. Karnaukhov. The PAC appreciated the results on this interesting phase of hot nuclear matter and supported this research line.

The 24th meeting of the Programme Advisory Committee for Particle Physics was held on 10–11 November. It was chaired by Professor T. Hallman.

The PAC for Particle Physics took note of the information, presented by JINR Director-designate A. Sissakian, on the preparation of the JINR Scientific Programme of Particle Physics for the years 2006–2008, as well as of the reports presented by A. Malakhov, Director of the Veksler and Baldin Laboratory of High Energies, A. Sorin, Deputy Director of the Bogoliubov Laboratory of Theoretical Physics, R. Lednický, Acting Director of the Laboratory of Particle Physics, A. Olchevski, Director of the Dzhelepov Laboratory of Nuclear Problems, and by V. Ivanov, Director of the Laboratory of Information Technologies. The PAC endorsed the main lines of the JINR Programme of Particle and Relativistic Nuclear Physics Research proposed by them for the period 2006–2008 in accordance with the available financial and human resources.

The PAC was pleased to note a draft of the road map in the field of particle physics presented by Professor A. Sissakian and DLNP Director A. Olchevski, and comprehensively discussed the proposed programme. It was particularly mentioned that the draft road map reflected the Institute's desire to continue the participation of JINR scientists in large international projects, as well as the Institute's commitments for further development of the Nuclotron and its experimental programme.

The PAC expressed its strong feeling that compelling future programme of particle physics being planned by JINR should be visible in a world view and encouraged JINR's participation in the open symposium planned by the CERN Council Strategy Group to develop a strategic plan for the future of high-energy physics in Europe.

The PAC noted the possible expression of interest by JINR to host the International Linear Collider. To be well positioned for this possibility, the PAC strongly encouraged JINR to be centrally involved in the ILC design effort and to invest sufficient resources in technology development to support its potential proposal to host the ILC.

The PAC heard with interest a report, presented by LIT Director V. Ivanov, on the preparation of the software and computing capability at JINR to allow JINR scientists to produce first scientific results at the time of LHC start-up, and approved these activities.

The PAC appreciated the significant amount of work already accomplished by LIT on the upgrade of the bandwidth of the telecommunication data link to Moscow up to 1 Gbps, on the technical support of the operation of the JINR gigabit highway, on the development of the JINR Grid-segment, and on the development of new methods and tools of mathematical data processing for experiments in particle physics, including participation in mass modeling for LHC experiments.

The PAC considered proposals of three new projects: «Measurement of the Rare Decay $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ in the Experiment at the CERN SPS» (project OKAPI), «Experiments with Charged Kaons at the Separated Kaon Beam of IHEP's Accelerator» (project OKA), and «A Study of Asymmetries of the Spin- and Structure-Dependent Interactions of Nucleons in Experiments with Polarized Targets and Beams» (project NN and GDH) and recommended their approval for execution with first priority until the end of 2006.

The PAC took note of the reports on 25 current research projects. It recommended 11 of them to be continued until the end of 2006 and 14 projects to be closed. At the same time the PAC noted the importance, in the process of streamlining the JINR particle physics programme, of ensuring that core competencies and unique resources are not lost.

Two scientific reports were presented at the session: «High-Multiplicity Particle Production in pp Interactions at $E_p = 70$ GeV» (collaboration THERMALIZATION) by V. Nikitin and «Possible Measurements of Generalized Parton Distributions with the Upgraded COMPASS at CERN» by I. Savin.

The 23rd meeting of the Programme Advisory Committee for Condensed Matter Physics was held on 14–15 November. It was chaired by Professor W. Nawrocki.

JINR Chief Scientific Secretary V. Zhabitsky informed the PAC on the Resolution of the 98th session of the JINR Scientific Council (June 2005) and the latest news in brief about JINR's activities.

IBR-2 Reactor. The PAC was informed by the Chief Engineer of the Frank Laboratory of Neutron Physics, V. Ananiev, about the status of the modernization of the IBR-2 reactor. The PAC appreciated the important contribution by V. Ananiev to the reactor modernization activity. The PAC recommended that the JINR and FLNP directorates take all necessary measures to ensure the continuation of the work for IBR-2 modernization according to schedule.

Programme of Condensed Matter Physics Research for 2006–2008. The PAC took note of the proposals for the JINR Programme of Condensed Matter Physics Research for 2006–2008 presented by labora-

tories. It recommended continuation of the research activities under the following themes in 2006 with first priority.

Frank Laboratory of Neutron Physics. «Neutron investigations of the structure and dynamics of condensed matter», «Development and creation of elements of neutron spectrometers for condensed matter investigations», as well as «Upgrade of the IBR-2 complex» as a flagship activity of JINR.

Flerov Laboratory of Nuclear Reactions. «Radiation effects and modification of materials, radioanalytical and radioisotopic investigations at the FLNR accelerators».

Bogoliubov Laboratory of Theoretical Physics. «Theory of condensed matter».

Laboratory of Radiation Biology. «Radiation and radiobiological investigations at the JINR basic facilities and in the environment».

Dzhelepov Laboratory of Nuclear Problems. «Further development of methods and instrumentation for radiotherapy and associated diagnostics with JINR hadron beams».

Draft Road Map in the Field of Condensed Matter Physics. The PAC endorsed the draft road map for condensed matter physics, presented by FLNP Director A. Belushkin, and recommended its further elaboration, taking into account the comments and suggestions made at this meeting, in particular a better structuring in terms of the priority fields of research at JINR, namely basic research, applied research, and educational programme.

The PAC expressed its concern that the momentum of the condensed matter programme should be maintained over the three-year shut-down period of IBR-2. There is a particular urgency to secure the continuing research activity of young scientists based at JINR — either through placement at international neutron facilities or through association with assignment to appropriate University groups.

IBR-2 Spectrometers. The PAC heard a plan for the development of spectrometers at IBR-2, presented by FLNP Sector Head A. Balagurov. The PAC would appreciate a more detailed evaluation of the spectrometer development projects in accordance with the needs of the Institute's strategic research programme in condensed matter physics.

Discussion of a New Project. The PAC took note of the report, presented by JINR Chief Engineer G. Shirkov, on the theme «DELSY» previously approved for completion in 2005. It also heard a proposal of the new project «Free-Electron Lasers Based on LINAC-800». After due discussion, the PAC made the following comments.

Aware of the strategic need to develop JINR expertise in FEL technology, the PAC however did not believe that, at that stage, the LINAC-800 FEL proposal was sufficiently mature to fall within the remit of the PAC for Condensed Matter Physics, as it is principally a project in accelerator technology and accelerator development.

Scientific Reports. The PAC noted with interest the report: «EXAFS Spectroscopy Study of the Cobaltites $\text{La}_{1-x}\text{Sr}_x\text{CoO}_3$ ($x = 0.0 \div 0.5$)» presented by V. Efimov, «Application of Laser Confocal Microscopy in Physics of Condensed Matter» presented by Yu. Kovalev, and «Research of a Visual Pigment of Rhodopsin: Spectroscopy and Molecular Modeling» presented by T. Feldmann.

Information on Conferences. The PAC took note of the information on the IV Workshop on Investigations at the IBR-2 Pulsed Reactor (Dubna, 15–18 June 2005) presented by S. Vasilovsky, and stressed the importance of this Workshop for the development of the road map of the JINR research programme in condensed matter physics.

The PAC took note of the information on the international conference «Genetic Consequences of Extremal Radiation Situations» (Dubna, 4–7 October 2005) presented by V. Krylov.

JINR Educational Programme. The PAC took note of the information about the III International Summer School on Nuclear Physics Methods in Biology and Medicine (Dubna, 30 June – 11 July 2005) presented by S. Ivanova. The PAC noted the success of this school and recommended its continuation in the future on a regular basis. The PAC highly appreciated the successful implementation of the JINR Educational Programme and its important role in promoting contacts with the Member States and for attracting young people to JINR. This activity should be continued with high priority.