

ACTIVITIES OF JINR GOVERNING AND ADVISORY BODIES

SESSIONS OF THE JINR COMMITTEE OF PLENIPOTENTIARIES

A regular session of the Committee of Plenipotentiaries of the Governments of the JINR Member States was held on 26–27 March. It was chaired by the Plenipotentiary of the Republic of Poland, M. Waligórski.

The Committee of Plenipotentiaries (CP) considered the report «Recommendations of the 111th Session of the JINR Scientific Council (February 2012). Results of JINR Activities in 2011» presented by JINR Director V. Matveev. The CP appreciated the successful implementation of activities during the first two years of the Seven-Year Plan for the Development of JINR (2010–2016). It recognized the achievements of JINR scientists in implementing the research programmes, in particular: the completion, in full compliance with the schedule, of the modernization of the IBR-2 reactor and its commissioning with the design parameters; the successful ongoing construction work for the complex of cryogenic moderators and spectrometers; the substantial progress in the implementation of the Nuclotron-NICA and NICA/MPD projects; the outstanding results achieved in the synthesis and chemistry of superheavy elements as marked recently by the recognition of the priority of the Flerov Laboratory of Nuclear Reactions and the Lawrence Livermore National Laboratory (USA) in the discovery of elements 114 and 116; the great progress in implementation of the DRIBS-III project; the stable operation of all the JINR basic facilities for experimental programmes; the significant advances in the development of the JINR information infrastructure, in particular, the start of work to build a Russian Tier-1 centre jointly with the NRC «Kurchatov Institute»; the growing contributions of JINR scientists, especially young people, to the production of physics results at the LHC.

The Committee concurred with the recommendations of the Scientific Council to complete, during 2012, the identification of the scope and areas of JINR's participation in the programme of upgrades of the LHC

and its detectors, as well as to complete licensing procedures and to begin implementation of an effective user programme of physics research at the modernized IBR-2 reactor with the maximum involvement of the JINR Member States.

The CP welcomed the extension of the Cooperation Agreement between the Federal Ministry of Education and Research (BMBF) of Germany and JINR for another term of three years.

The CP agreed with the Directorate's proposal to build a monument to Academician V. Veksler, one of the founders of JINR and outstanding accelerator physicist, on the site of the Laboratory of High Energy Physics, on the occasion of the 105th anniversary of his birth.

Based on the report «Execution of the JINR Budget in 2011» presented by V. Katrasev, Assistant Director of JINR for Financial and Economic Issues, the CP took note of the information on the execution of the JINR budget in 2011 in expenditure — US\$95 993.0 thousand, and in income — US\$98 704.5 thousand. The Committee empowered the company «MS-Audit» to examine the JINR financial activity for the year 2012 and approved the plan for auditing this activity presented by the JINR Directorate.

With the recommendations of the Finance Committee and the Working Group for financial issues of JINR under the CP Chairman taken into account, the CP commissioned the JINR Directorate to address the Plenipotentiaries of the Governments of the JINR Member States with a request to express, until 1 June 2012, their opinions on the new methodology being proposed for calculating the Member States' contributions to the JINR budget, using the rules determining the contributions in compliance with the JINR Charter. The CP also commissioned the JINR Directorate and the Working Group for financial issues of JINR under the CP Chairman to prepare the final version of the methodology for calculating the Member States' contributions to

the JINR budget for approval at the meeting of the Finance Committee and at the session of the Committee of Plenipotentiaries in November 2012, in order to begin the use of this methodology in calculating contributions for the year 2014.

In accordance with the JINR Charter, the CP suspended the right to vote of the Democratic People's Republic of Korea and of the Republic of Uzbekistan in the Committee of Plenipotentiaries, due to the availability of financial arrears of these Member States in the payment of contributions to the JINR budget. It asked the Plenipotentiaries of these states to bring this decision of the Committee of Plenipotentiaries to the attention of their governments.

Regarding the report «Results of the Meeting of the JINR Finance Committee Held on 23–24 March 2012», presented by N. Pershay, Chairman of the Finance Committee, the CP approved the Protocol of this meeting. It also approved the report of JINR for the year 2011 on the execution of the budget in expenditure amounting to US\$95 993.0 thousand, with the summary account as of 01.01.2011 being US\$526 227.0 thousand. The CP also approved the auditors' report concerning the financial activity of JINR examined for the year 2011, presented by A. Sedyshev, Director of the company «MS-Audit», and thanked the company for the high quality of its audit work.

As proposed by JINR Director V. Matveev and based on the results of voting, the CP appointed M. Itkis and R. Lednický as Vice-Directors of JINR, N. Rusakovich as Chief Scientific Secretary of JINR, and G. Shirkov as Chief Engineer of JINR, for the term of office of the newly elected Director of JINR, i.e., until 1 January 2017.

The CP heard with interest and discussed the scientific report «The IBR-2 Reactor after the Completion of Upgrade and Future Research with Its Beams», presented by FLNP Director A. Belushkin.

The Committee of Plenipotentiaries deeply regretted the sad loss of Jerzy Janik, member of the Polish Academy of Sciences and member of the JINR Scientific Council during 1970–2008, who had made outstanding contributions to the development of cooperation between JINR and research centres of the Member States. The CP supported the proposal of the Plenipotentiary of the Republic of Poland to JINR, M. Waligórski, to name one of the alleys on the site of DLNP in honour of Academician J. Janik.

A regular session of the Committee of Plenipotentiaries of the Governments of the JINR Member States was held on 23–24 November. It was chaired by the Plenipotentiary of the Government of the Republic of Poland, M. Waligórski.

The Committee of Plenipotentiaries (CP) considered the report «Recommendations of the 112th Session of the JINR Scientific Council (September 2012). Brief Overview of the Results of JINR Activities in 2012 and Plans for 2013» presented by JINR Director

V. Matveev. The CP approved the recommendations of the 111th and 112th sessions of the Scientific Council as well as the JINR Topical Plan of Research and International Cooperation for 2013. It recognized the important results produced by the JINR staff both in conducting physics research and in implementing the key objectives of the Seven-Year Plan, in particular: the significant progress achieved towards construction of the NICA facility, now entering the phase of valuable capital investments; the start-up of a unique cold moderator at the IBR-2 reactor; the discovery, with important contributions by JINR groups, of a new, Higgs-like boson at the LHC, the involvement of JINR in the measurement of the neutrino mixing angle θ_{13} ; the new confirmation of the discovery of superheavy element 117; the essential contribution by JINR to the construction of the Russia-based Tier-1 centre; the progress towards integration of JINR basic facilities into the European Research Infrastructure as well as the steps being taken towards closer cooperation between JINR and GSI/FAIR.

The CP supported the proposal by the JINR Directorate to award the staff members of JINR who had made key contributions to the construction of the ATLAS and CMS detectors and to the conduct of research using these instruments.

Considering the important task to carry out an interim analysis of the results of the first three years of implementation of the Seven-Year Plan for the Development of JINR for 2010–2016, the CP commissioned the Directorate to present the results of such an analysis, together with the necessary updates proposed for the period 2013–2016, at the next CP session in March 2013.

Regarding the report «Results of the Meeting of the JINR Finance Committee Held on 20–21 November 2012», presented by S. Kulhánek, Chairman of the Finance Committee, the CP approved the Protocol of this meeting.

Based on the report «Draft Budget of JINR for the Year 2013, Draft Contributions of the Member States for the Years 2014, 2015, and 2016» presented by V. Katrasev, Assistant Director of JINR for Financial and Economic Issues, the Committee approved the JINR budget for the year 2013 with the total expenditure amounting to US\$143.22 million as well as the contributions of the Member States for the year 2013. The Committee determined the provisional volumes of the JINR budgets in income and expenditure for the year 2014 amounting to US\$158.73 million, for the year 2015 — US\$180.58 million, and for the year 2016 — US\$207.24 million. It also adopted the provisional sums of the Member States' contributions and of arrears payments for 2014, 2015, and 2016.

The Committee allowed the JINR Directorate to index the salary and tariff parts of the compensation package of all staff members, taking into account the possibilities afforded by the JINR budget in 2013, in accordance with the JINR Collective Bargaining Agreement for 2011–2013.

The CP adopted as a basis the proposed methodology for calculating the Member States' contributions to the JINR budget and decided to introduce it for consideration at the session of the Committee of Plenipotentiaries in March 2013, due to the need for its further elaboration by the Member States.

Regarding the report «Status of JINR's Interaction with ESFRI, CERN and Other European Organizations», presented by JINR Chief Scientific Secretary N. Russakovich, the CP took note of the information about the interaction of the JINR Directorate with the Directorate General of the European Commission for Research and Innovation and with the European Strategy Forum on Research Infrastructures (ESFRI), about JINR's participation in the work of the European Strategy Group for Particle Physics, the Association ASPERA and other organizations in the European Union. The CP asked the Plenipotentiaries of the JINR

Member States which are members of the EU to provide support to JINR's initiatives concerning integration into the European research infrastructure through representatives of their countries in EU institutions.

Based on the report «Results of Activities of the Legal Entities Established with the Participation of JINR», presented by A. Ruzaev, Assistant Director of JINR for Innovation Development, the CP commissioned the Directorate to carry out regular monitoring of the activities of such entities and report it to the Finance Committee and the Committee of Plenipotentiaries. It also commissioned the Directorate to prepare proposals for the further development of the innovative component in the activities of JINR.

The CP heard with interest the scientific report «Development of Low-Energy Heavy-Ion Physics at JINR», presented by JINR Vice-Director M. Itkis, and thanked the speaker.

SESSIONS OF THE JINR SCIENTIFIC COUNCIL

The 111th session of the JINR Scientific Council took place on 16–17 February. It was chaired by JINR Director V. Matveev and Professor Gh. Stratan of the H. Hulubei National Institute for Physics and Nuclear Engineering (Bucharest).

V. Matveev informed the Scientific Council about the decisions of the regular session of the Committee of Plenipotentiaries of the Governments of the JINR Member States (November 2011), of the major results obtained by JINR in 2011 and of the activities planned for 2012.

The progress reports presented at the session concerned the status of the IBR-2 reactor and its cryogenic moderator complex, and the contributions to LHC data analysis made by the JINR groups in the ATLAS, CMS, and ALICE experiments.

The recommendations of the Programme Advisory Committees were reported by E. Tomasi-Gustafsson (PAC for Particle Physics), W. Greiner (PAC for Nuclear Physics), and P. Alekseev (PAC for Condensed Matter Physics).

Diplomas «Honorary Doctor of JINR», the 2011 B. Pontecorvo Prize, and diplomas to the winners of JINR prizes for the year 2011 were awarded at the session.

Vacancies of the positions in the directorates of JINR laboratories were announced.

The Scientific Council also heard the best reports by young scientists which had been delivered as poster presentations at the PAC meetings.

Resolution. General Considerations. The Scientific Council took note of the decisions of the session of the Committee of Plenipotentiaries of the Governments of the JINR Member States (November 2011),

appreciated the results obtained by JINR in 2011 and the activities planned for 2012.

Noting with satisfaction the growing financial support given by the Member States, which allowed the JINR budget to be increased by 27.5% in 2012, the Scientific Council looks forward to continued adequate funding of the JINR ambitious programmes in science and technology envisaged by the Seven-Year Plan for JINR Development until 2016.

The Scientific Council highly appreciated the results of work towards implementing the seven-year plan by the JINR staff during the last two years which were characterized by the stable operation of all the basic facilities, as presented in the report by Professor V. Matveev.

The powering-up of the modernized IBR-2 reactor and the accomplishment of first experiments with extracted neutron beams paved the way for an exciting research programme in the field of condensed matter physics, in line with the updated user policy of FLNP. The advances in the development of the VBLHEP accelerator complex, the substantial progress in the implementation of the Nuclotron–NICA and NICA/MPD projects, based on international scientific and technological expertise, and the confirmation of element 117 of the Mendeleev periodic table as a result of a unique physics experiment were also recognized. The Scientific Council congratulated the staff of the Flerov Laboratory of Nuclear Reactions and their colleagues at the Lawrence Livermore National Laboratory (USA) for the recognition of their priority in the discovery of elements 114 and 116. It looks forward to the approval by IUPAC of the names proposed by them for these elements — flerovium and livermorium.

GOVERNING AND ADVISORY BODIES OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH

COMMITTEE OF PLENIPOTENTIARIES OF THE GOVERNMENTS OF THE JINR MEMBER STATES

Republic of Armenia	S. Harutyunyan	Republic of Moldova	I. Tighineanu
Republic of Azerbaijan	M. Kerimov	Mongolia	S. Davaa
Republic of Belarus	I. Vojtov	Republic of Poland	M. Waligórski
Republic of Bulgaria	S. Tzotchev	Romania	N.-V. Zamfir
Rebulic of Cuba	J. L. Fernández Chamero	Russian Federation	A. Fursenko
Czech Republic	R. Mach	Slovak Republic	S. Dubnička
Georgia	A. Khvedelidze	Ukraine	B. Grynyov
Republic of Kazakhstan	K. Kadyrzhanov	Republic of Uzbekistan	U. Salikhbaev
D. P. Republic of Korea	Li Je Sen	Socialist Republic of Vietnam	Nguyen Van Hieu

Finance Committee

One representative
of each JINR Member State

SCIENTIFIC COUNCIL

Chairman: V. Matveev

Co-Chairman: Gh. Stratan (Romania)

Scientific Secretary: N. Russakovich

O. Bahram-oglu Abdinov	Azerbaijan	V. Kadyshesky	Russia	J. Ružička	Slovakia
I. Antoniou	Greece	M. Kovalchuk	Russia	V. Sahni	India
T. Baatar	Mongolia	K. Królas	Poland	Š. Šaro	Slovakia
E. Batyrbekov	Kazakhstan	G. Kulipanov	Russia	N. Shumeiko	Belarus
M. Budzyński	Poland	V. Kuvshinov	Belarus	A. Skrinsky	Russia
Gh. Căta-Danil	Romania	A. Logunov	Russia	P. Spillantini	Italy
M. Eliashvili	Georgia	V. Matveev	Russia	M. Spiro	France
J. Ellis	Switzerland	T. Muminov	Uzbekistan	H. Stöcker	Germany
S. Galès	France	D. Nagy	Hungary	Ch. Stoyanov	Bulgaria
N. Giokaris	Greece	W. Nawrocik	Poland	Gh. Stratan	Romania
B. Grynyov	Ukraine	Nguyen Manh Shat	Vietnam	V. Strazhev	Belarus
F. Gusman Martines	Cuba	Nguyen Van Hieu	Vietnam	N. Tonchev	Bulgaria
Chen Hesheng	China	Pak Byong Sob	Democratic People's Republic of Korea	C. Turtă	Moldova
R.-D. Heuer	Switzerland	G. Piragino	Italy	I. Wilhelm	Czech Republic
P. Jenni	Switzerland	G. Pogosyan	Armenia	G. Zinovjev	Ukraine

Programme Advisory Committee for Particle Physics

Chairperson: E. Tomasi-Gustafsson (France)
Scientific Secretary: V. Kolesnikov

Programme Advisory Committee for Nuclear Physics

Chairperson: W. Greiner (Germany)
Scientific Secretary: N. Skobelev

Programme Advisory Committee for Condensed Matter Physics

Chairperson: V. Kantser (Moldova)
Scientific Secretary: O. Belov

INTERNAL ORGANIZATION OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH

DIRECTORATE
Director V. Matveev
Vice-Director M. Itkis
Vice-Director R. Lednický
Chief Scientific Secretary N. Russakovich
Chief Engineer G. Shirkov

Bogoliubov Laboratory of Theoretical Physics	Veksler and Baldin Laboratory of High Energy Physics	Dzhelepov Laboratory of Nuclear Problems	Flerov Laboratory of Nuclear Reactions	Frank Laboratory of Neutron Physics	Laboratory of Information Technologies	Laboratory of Radiation Biology	University Centre
Director V. Voronov	Director V. Kekelidze	Director A. Olshevski	Director S. Dmitriev	Director A. Belushkin	Director V. Ivanov	Director E. Krasavin	Director S. Pakuliak
<i>Research in</i> – symmetry properties of elementary particles – field theory structures – interactions of ele- mentary particles – theory of atomic nuclei – theory of condensed matter	<i>Research in</i> – structure of nucleons – strong interactions of particles – resonance pheno- mena in particle interactions – electromagnetic interactions – relativistic nuclear physics – particle acceleration techniques – interactions of multicharged ions in a wide energy range	<i>Research in</i> – strong, weak and electromagnetic interactions of particles, particle structure – nuclear structure – nuclear spectroscopy – mesoatomic and mesomolecular processes – particle acceleration techniques – radiobiology	<i>Research in</i> – properties of heavy elements, fusion and fission of complex nuclei, cluster radio- activity, reactions on an isomer hafnium target – reactions with beams of radioactive nuclei, structure of neutron- rich light nuclei, nonequilibrium processes – interactions of heavy ions with condensed matter – particle acceleration techniques	<i>Research in</i> – nuclei by neutron spectroscopy methods – fundamental properties of neutrons – atomic structure and dynamics of solids and liquids – high-temperature superconductivity – reactions on light nuclei – materials by neutron scattering, neutron activation analysis and neutron radio- graphy methods – dynamic charac- teristics of the pulsed reactor IBR-2	<i>Research in</i> – provision of opera- tion and development of the JINR computing and networking infra- structure – optimal usage of international computer networks and information systems – modern methods of computer physics, development of stan- dard software	<i>Research in</i> – radiation genetics and radiobiology – photo radiobiology and molecular biophysics systems – radiation protection physics	<i>Directions of activities:</i> – senior students’ education – JINR postgraduate courses – school students’ education – staff training and retraining – organization of schools and practice courses in JINR research trends
							Central Services – central scientific and information departments – administrative and economic units – manufacturing units

As other examples of successful activities of JINR, the Scientific Council noted: the active involvement of theoretical physicists in the JINR experimental programmes, the important results achieved by JINR scientists in experiments performed elsewhere, the significant advances in the development of the JINR infrastructure for massive data processing and the successful start of work to build a Tier-1 centre jointly with the NRC «Kurchatov Institute», the efforts made by the JINR University Centre to extend its educational programmes based on the JINR Laboratories and links with research institutions of the Member States and other countries.

Recommendations on Reported Activities. Concerning the report «Status of the IBR-2 Reactor and Its Cryogenic Moderator Complex» presented by FLNP Director A. Belushkin, the Scientific Council appreciated the successful completion of work for the physical construction and powering-up of the reactor, the timely resumption of the stable exploitation of the reactor at the rated power of 2 MW and the accomplishment of first physics experiments with extracted neutron beams during two cycles. The technical and organizational readiness of the reactor for its regular operation was confirmed by the application prepared by JINR to obtain the license for exploitation of IBR-2. The Scientific Council also recognized that the work towards building a complex of cryogenic moderators for IBR-2 was proceeding according to schedule, and recommended the focusing of efforts on the installation of a cryogenic moderator in its planned location at the reactor and on the performance of necessary tests of the moderator during in-power operation of the reactor in 2012.

The Scientific Council emphasized the importance of the resumption, in the current year, of regular experiments with neutron beams extracted from the reactor in accordance with the FLNP user policy, of the continued efforts to develop the IBR-2 spectrometer complex, and of the implementation of the planned research programme.

Concerning the reports «Contributions of the JINR Groups to LHC Data Analysis» presented by participants in the ATLAS, CMS, and ALICE experiments: I. Yeletskikh, S. Shmatov, and L. Malinina, the Scientific Council noted with satisfaction the ever-growing contributions of JINR scientists, especially young people, to the unique programme of fundamental physics research at the Large Hadron Collider. It also strongly supported the expansion of participation by JINR physicists in LHC data analysis.

Recommendations in Connection with the PACs. The Scientific Council concurred with the recommendations made by the PACs at their January 2012 meetings as reported at this session by Professors E. Tomasi-Gustafsson, W. Greiner, and P. Alekseev.

Particle Physics Issues. The Scientific Council highly appreciated the progress made in upgrade of the VBLHEP accelerating complex and congratu-

lated the team for the productive Run 44 (November–December 2011) of the Nuclotron.

The Scientific Council noted with satisfaction the significant amount of work accomplished in the preparation of the White Paper dedicated to the research programme of the NICA project and the emergence of new proposals for both the collider (MPD) and fixed-target (BM@N) experiments.

The Scientific Council also highly appreciated the substantial progress achieved in realization of the MPD project and the beginning of fruitful collaboration between the MPD team and Detector Advisory Committee. It thanked the members of the Committee for the efforts being undertaken for a detailed evaluation of the realization of the project.

The Scientific Council recognized the scientific significance of the results obtained with the active participation of JINR physicists in the ATLAS, ALICE, and CMS experiments, and supported the PAC's recommendations on the submission of detailed projects for the detector upgrades under the general guidance of the JINR Directorate as far as priorities (at CERN and at JINR) and availability of resources are concerned.

The Scientific Council heard with interest about the possibility of studying nucleon spin structure at the NICA accelerator facility proposed by the SPD team, and looks forward to a detailed proposal taking advantage of holding the 20th International Symposium on Spin Physics (SPIN2012) in Dubna.

The Scientific Council supported the approval of the new project «Baryonic Matter at the Nuclotron (BM@N)» to study heavy-ion collisions with beams extracted from the Nuclotron.

Nuclear Physics Issues. The Scientific Council appreciated the high quality of investigations within the framework of the theme «Non-Accelerator Neutrino Physics and Astrophysics» which was devoted to search for neutrinoless double-beta decay, experiments with reactor antineutrinos, the search for Dark Matter, and deep-water investigations with the neutrino telescope at Lake Baikal. The Scientific Council supported the PAC's recommendations on the extension of this theme and on the continuation of its projects GERDA, GEMMA, DANSS, EDELWEISS, and BAIKAL. Due to the successful completion of the NEMO-3 experiment within this theme, it also supported the recommendation to approve the new project SuperNEMO.

The Scientific Council was pleased to note that the implementation of the DRIBs-III project proceeded according to the Seven-Year Plan for the Development of JINR and the recommendations of the PAC and the JINR Scientific Council. The SHE-factory to be created on the basis of the new high-current DC-280 cyclotron would allow JINR to keep its leading position in the field of the synthesis and study of superheavy elements. The Scientific Council took note of the PAC's recommendation concerning inclusion of the project of recon-

struction of the U400 accelerator experimental hall in the Seven-Year Plan for the Development of JINR.

The Scientific Council noted that the new set-up proposed by FLNR to be constructed for on-line separation of reaction products by means of selective laser ionization would extend the experimental possibilities of the laboratory in the field of low-energy heavy-ion physics and recommended starting the construction of this set-up in 2012.

The Scientific Council emphasized the importance of the IREN facility and supported continued efforts towards putting it into operation with the design parameters within the shortest possible time.

Condensed Matter Physics Issues. The Scientific Council appreciated the progress in the development of the modernized IBR-2 reactor, expecting that, once the license from the Russian Federal Environmental, Industrial and Nuclear Supervision Service was obtained for the regular operation of the reactor, the programme of regular physics experiments would be resumed in accordance with the JINR Seven-Year Development Plan and with the user policy. It also supported the further extension of the user infrastructure at the IBR-2 spectrometers.

The Scientific Council appreciated the progress achieved in construction of the new multifunctional reflectometer GRAINS and in modernization of the SKAT and EPSILON diffractometers. It also endorsed the PAC's recommendation on the development of the project for a neutron imaging instrument for the IBR-2 reactor.

The Scientific Council recognized the importance of regular organization of conferences and seminars on life sciences at JINR.

Reports by Young Scientists. The Scientific Council noted with interest the following reports by young scientists, which had been selected by the PACs for presentation at this session: «Computer Analysis of Nanoscale Quantum-Dimensional Model Structures in External Fields», «Precise Measurement of Charm Dimuon Production Cross Section in Neutrino–Nucleon Interactions and Its Various Applications», «Influence of Proton Shell Closure on Production of New Superheavy Nuclei», and thanked the speakers: A. Gusev, O. Samoylov, and A. Kuzmina. The Scientific Council encouraged the continuation of similar presentations at its future meetings and suggested that the speakers should be rewarded.

Scientific Reports. The Scientific Council highly appreciated the scientific reports: «Physics of Low-Energy Heavy Ions at JINR» presented by Professor M. Itkis, «Life and Biosphere on the Early Earth» presented by Professor A. Rozanov, «OPERA vs Maxwell and Einstein» presented by Professor J. Ellis, and thanked the speakers.

Awards and Prizes. The Scientific Council congratulated Professors L. Pikelner and L. Zolin on the award of the title «Honorary Doctor of JINR».

The Scientific Council approved the Jury's recommendations on the JINR prizes for 2011 in the annual scientific research competition in the fields of theoretical physics, experimental physics, physics instruments and methods, and applied physics.

The Scientific Council congratulated Professor S. Wojcicki (Stanford University, USA) on the award of the 2011 B. Pontecorvo Prize for his outstanding contributions to the development and construction of the MINOS detector, and for the new results obtained in particle physics, especially in the field of neutrino oscillations. The Scientific Council thanked Professor S. Wojcicki for his impressive presentation.

Elections and Announcement of Vacancies in the Directorates of JINR Laboratories. The Scientific Council elected by ballot S. Dmitriev as Director of the Flerov Laboratory of Nuclear Reactions (FLNR) and V. Voronov as Director of the Bogoliubov Laboratory of Theoretical Physics (BLTP), each for a second term of five years. The Scientific Council announced the vacancies of the positions of Deputy Directors of FLNR and BLTP. The election for these positions took place at the 112th session of the Scientific Council.

The Scientific Council agreed with the proposal of the JINR Directorate to postpone the election of the Director of the Frank Laboratory of Neutron Physics until the 113th session of the Scientific Council. It also supported the proposal to extend the term of office of A. Belushkin as Director of this Laboratory for one year.

The Scientific Council announced the vacancy of the position of the Director of the Laboratory of Information Technologies, with the election for this position at the 113th session of the Scientific Council.

General Discussion. The Scientific Council stressed the importance of maintaining a healthy balance between internal and external activities as represented, for example, by the collaborations of CERN and FAIR with NICA in the field of heavy-ion physics, and collaborations between JINR, GSI, and Livermore in research on superheavy elements.

The Scientific Council highly appreciated the wide scale of the collaboration between GSI and JINR in promoting relativistic heavy-ion physics in both laboratories. It noted, in particular, their cooperation in the construction of modern superconducting accelerators and advanced detectors, which involves the contribution of large-scale resources and merits the strong support of both institutions.

The Scientific Council noted that the CERN Council was planning an update of the European Strategy for Particle Physics, and encouraged JINR and its physicists to play active roles in the preparation of this update.

The Scientific Council also noted that JINR was active in R&D on ILC and CLIC, and that it maintains its interest in the possibility of hosting the ILC in Dubna.

The Scientific Council looks forward to receiving at its next meeting a report on JINR plans for participating

in upgrades of the LHC detectors and a report from the MPD-DAC.

The Scientific Council encouraged JINR to hold discussions with other laboratories active in superheavy element research, with a view to developing an agreed global strategy for this field, and looks forward to receiving a report on this issue at its next meeting. Reports on JINR activities in condensed matter physics, on progress with IREN, and on JINR plans for future activities related to astrobiology were also invited.

The Scientific Council welcomed the initiative to intensify the collaboration between the Laboratory of Radiation Biology and the Russian Academy of Sciences in the field of life sciences. It also suggested that the JINR Directorate enhance the representation of specialists in this field in the membership of the PAC for Condensed Matter Physics.

The 112th session of the JINR Scientific Council took place on 27–28 September. It was chaired by JINR Director V. Matveev and Professor Gh. Stratan of the H. Hulubei National Institute for Physics and Nuclear Engineering (Bucharest).

V. Matveev informed the Scientific Council about the progress in implementation of the recommendations of the 111th session of the Scientific Council and of the decisions of the session of the Committee of Plenipotentiaries of the Governments of the JINR Member States (March 2012).

The progress reports presented at the session included activities in the field of condensed matter physics at the IBR-2 reactor, prospects for spin physics research at the Nuclotron–NICA complex, the progress of activities for the IREN project, JINR’s plans for participation in the upgrades of the LHC, ALICE, ATLAS, and CMS detectors, as well as joint educational projects with BNL and CERN for school students and teachers of physics.

The recommendations of the Programme Advisory Committees were reported by E. Tomasi-Gustafsson (PAC for Particle Physics), W. Greiner (PAC for Nuclear Physics), and V. Kantser (PAC for Condensed Matter Physics).

Elections of Deputy Directors of BLTP and FLNR were held at the session, and vacancies of the positions in the directorates of JINR laboratories were announced. JINR Scientific Secretary N. Russakovich delivered information about the forthcoming election of the new membership of the Scientific Council (March 2013).

V. Matveev presented the Directorate’s proposals for the award of the title «Honorary Doctor of JINR». The V. Dzhelepov Prize and diplomas to the winners of JINR prizes for the year 2011 were awarded at the session.

The Scientific Council also heard the best reports by young scientists which had been delivered as poster presentations at the PAC meetings.

Resolution. General Considerations. The Scientific Council appreciated the progress in implementing

the recommendations of its 111th session and the decisions of the session of the Committee of Plenipotentiaries of the Governments of the JINR Member States (March 2012). As examples of successful activities of JINR, the Scientific Council noted: the significant progress achieved towards construction of the NICA facility, now entering the phase of valuable capital investments; the start-up of the world’s first pelletized cold moderator at the IBR-2 reactor; the discovery, with important contributions by JINR groups, of the new Higgs-like boson at the LHC; the involvement of JINR in the measurement of the neutrino mixing angle θ_{13} ; the new confirmation of the discovery of the superheavy element 117; the progress in construction of the FLNR new experimental hall; the essential contribution by JINR to construction of the Russia-based LHC Tier-1 centre; the promising steps to closer cooperation between JINR and GSI/FAIR; the progress towards integration of JINR basic facilities in the European Research Infrastructure, based on recent negotiations with the EU Commission and ESFRI management.

The Scientific Council noted that a good balance between well-focused internal and external activities of the Institute is being achieved, and encouraged the JINR Directorate to reach a good balance between hardware construction and analysis leading to physics publications.

Recommendations on Reported Activities. Concerning the report «Activities in the Field of Condensed Matter Physics at the IBR-2 Reactor» presented by FLNP Department Head D. Kozlenko, the Scientific Council welcomed the beginning of the regular operation of the modernized IBR-2 reactor for scientific experiments and the resumption of the user programme based on the reactor’s spectrometer complex, which provides ample opportunities for researchers from the Member States and other countries to conduct scientific experiments using neutron scattering methods. The Scientific Council noted the high quality of scientific research conducted by JINR in the field of condensed matter physics. An important task is the further development of the spectrometer complex aimed at expanding the range of the scientific problems to be addressed and of the experimental possibilities.

The Scientific Council took note of the report «Prospects for Spin Physics Research at Nuclotron–NICA» presented by VBLHEP Director V. Kekelidze. It recognized the opportunities of the Nuclotron–NICA accelerator complex for competitive research with polarized beams. It also encouraged further work on the scientific programme for the NICA collider, including experiments on spin physics with beams extracted from the Nuclotron, and the organization of dedicated workshops under the auspices of the international spin physics community. The Scientific Council congratulated JINR on the success of the 20th International Symposium on Spin Physics (Dubna, 17–22 September 2012).

Concerning the report «Progress of Activities for the IREN Project» presented by FLNP Deputy Director V. Shvetsov, the Scientific Council appreciated the successful start of the IREN experimental programme with extracted beams and target. It recommended focusing of efforts on the development of the accelerator and nonmultiplying neutron production target with a view to bringing the IREN facility to the world-class level within the shortest possible time.

The Scientific Council took note of the reports «JINR Plans for Participation in the Upgrades of the LHC and Detectors» presented by the leaders of these activities in JINR groups of the ALICE, ATLAS, and CMS experiments: A. Vodopyanov, A. Cheplakov, and A. Zarubin. It welcomed these intentions and their implementation within the Seven-Year Plan for the Development of JINR (2010–2016). The Scientific Council congratulated the participants of the ATLAS and CMS experiments on the discovery of a new, Higgs boson-like particle. This result opens a new chapter in the history of particle physics and shapes the physics agenda for the foreseeable future.

The Scientific Council heard with particular interest the report «Joint Educational Projects with BNL and CERN for School Students and Teachers of Physics» presented by VBLHEP Department Head Yu. Panebrattsev. It appreciated the work accomplished, given the utmost importance of developing young people's interest in science and technology and of attracting talented young scientists from the Member States to join JINR research and innovation projects. The Scientific Council recommended that the JINR Directorate support the effort to further develop the Academician Alexey Sissakian Education Centre, which had been established jointly with the University «Dubna» for sharing the achievements of modern science and technology and for improving the quality of education for a new generation of young scientists. The Scientific Council thanked the Rector of the University «Dubna», D. Fursaev, for the explanations given during the visit to the Centre.

Recommendations in Connection with the PACs.

The Scientific Council concurred with the recommendations made by the PACs at their June 2012 meetings as reported at this session by Professors E. Tomasi-Gustafsson, W. Greiner, and V. Kantser.

Particle Physics Issues. The Scientific Council appreciated the significant progress in upgrading the VBLHEP accelerator complex and congratulated the Laboratory staff on the successful Run 45 (February–March 2012) of the Nuclotron, when the deuteron beam energy was increased to 4.5 GeV/u for the first time. It also appreciated the proposed strategy for the review and construction of the NICA complex with full involvement of the JINR Member States, recommending that the VBLHEP Directorate concentrate maximum resources on this flagship project.

The Scientific Council welcomed the new contributions to the White Paper for the research programme of the NICA project, the holding of the dedicated NICA–FAIR bilateral workshop «Matter at Highest Baryon Densities in the Laboratory and in Space» (Frankfurt Institute for Advanced Studies, 2–4 April 2012), awaiting the continuation of this important work.

The Scientific Council noted the fruitful dialog between the MPD team and Detector Advisory Committee (MPD DAC), and the adoption of important modifications for the solenoid design and the MPD end-cap. It thanked the members of the MPD DAC for the detailed evaluation of the project.

The Scientific Council supported the PAC's recommendations on the approval of JINR's participation in the new project NA61/SHINE and on the continuation of the current first-priority projects and activities in particle physics within the suggested time scales, as outlined in the PAC report. It highly appreciated the substantial hardware contributions of JINR groups in external experiments and encouraged them to focus their efforts on physics analysis.

The Scientific Council recognized the important results obtained with the active participation of JINR physicists in the ATLAS, ALICE, and CMS experiments. It asked the PAC to consider the final proposals for the participation of the JINR groups in the upgrades of the detectors and to inform the Scientific Council about this work at its next session.

Nuclear Physics Issues. The Scientific Council noted with satisfaction the approval by the International Union of Pure and Applied Chemistry of the names «flerovium» and «livermorium» for elements 114 and 116, in honour of the Flerov Laboratory of Nuclear Reactions and the Lawrence Livermore National Laboratory (USA).

The Scientific Council supported continuation of the research programme within the theme «Improvement of the JINR Phasotron and Development of Cyclotrons for Fundamental and Applied Research», focused on the design and improvement of accelerators for hadron therapy applications.

The Scientific Council also supported continuation of the programme to study the production, decay and interaction of light mesons aimed at determining the symmetries and the interaction dynamics, which is carried out via the theme «Physics of Light Mesons» at the intermediate-energy accelerators in Jülich, Mainz, Villigen, Gatchina, and Dubna. It particularly noted the interesting programme of the MEG-PEN project devoted to the study of the rare and forbidden decays $\pi^+ \rightarrow e^+\nu$ and $\mu^+ \rightarrow e^+\gamma$ at PSI and of the SPRING project concerned with polarization phenomena in hadron interactions.

The Scientific Council strongly supported the efforts of the FLNR Directorate to develop ECR ion sources. This work is an important part of the scientific pro-

gramme allowing the Laboratory to reach a considerable increase of beam intensity needed for further studies.

Condensed Matter Physics Issues. The Scientific Council appreciated highly the first stage of operation of the modernized IBR-2 reactor and supported the implementation of the programme of regular physics experiments. It also welcomed the FLNP programme of applied research, which is conducted in close collaboration with Member States.

The Scientific Council appreciated the continuation of work for the timely commissioning of the upgraded instruments at neutron beams extracted from the reactor, in particular for the construction of the DN-6 diffractometer and for the upgrade of the FSD (Fourier stress diffractometer).

The Scientific Council recognized the results achieved in proton radiotherapy within the theme «Medical and Biological Research with JINR Hadron Beams» and supported the PAC recommendations for its extension for a new three-year term. Regarding CARS microscopy and microspectroscopy as complementary to existing methods at JINR, the Scientific Council also supported the recommendation for the opening of the new theme «A Multimodal Platform for Raman and Nonlinear Optical Microscopy and Microspectroscopy for Condensed Matter Studies». Noting the discussions concerning the new theme entitled «Biogeochemical Study of Cosmic Matter on Earth and in Nearby Space. Research on the Biological and Geochemical Features of the Early Earth», the Scientific Council concurred with the PAC that a detailed scientific proposal, the financial plan for its realization, and suggestions for the involvement of JINR Member States in this activity were needed for its approval.

The Scientific Council noted the progress in realization of the MUON project and shared the PAC's opinion about its continuation by expanding activity at JINR facilities.

Common Issues. The Scientific Council pointed out that major physics themes and projects (like hadronic physics and cancer therapy with accelerators) were developed in different laboratories of JINR and monitored by different PACs. It suggested that the JINR Directorate coordinate these efforts towards an efficient and coherent conduct of these research themes.

Reports by Young Scientists. The Scientific Council heard with interest the reports by young scientists, recommended by the PACs for presentation at this session: «Influence of Accelerated ^{18}O Ions on the Growth of HPRT-Mutant Subclones of Chinese Hamster Cells», «The ^{10}He Resonant States Observed in Correlation Measurements of the $^8\text{He} (^3\text{H}, p) ^{10}\text{He}$ Reaction», «The BES-III Experiment», and thanked the speakers: P. Bláha, S. Krupko, and I. Denysenko, respectively.

Memberships of the PACs. As proposed by the JINR Directorate, the Scientific Council appointed Professor I. Tserruya (WIS, Rehovot, Israel) as Chairperson of the PAC for Particle Physics for a term of three years.

The Scientific Council thanked Professor E. Tomasi-Gustafsson for her very successful work as Chairperson of this PAC and extended her membership in this PAC for one year.

The Scientific Council re-appointed Professor W. Greiner as Chairperson of the PAC for Nuclear Physics for a term of three years.

The Scientific Council re-appointed Professor V. Kantser as Chairperson of the PAC for Condensed Matter Physics for a term of three years. It also appointed Professors V. Lisý (Technical University, Košice, Slovakia) and D. Nagy (IPNP, Budapest, Hungary) as new members of this PAC for a term of three years. The Scientific Council thanked the outgoing members: Professors P. Balgavý, L. Bottyán, and G. Eckold for their very successful work as members of this Committee.

Awards and Prizes. The Scientific Council endorsed the proposal of the JINR Directorate to award the title «Honorary Doctor of JINR» to Professors A. Sigov (MIREA, Moscow, Russia) and T. Zhanlav (NUM, Ulaanbaatar, Mongolia), in recognition of their outstanding contributions to the advancement of science and the education of young scientists.

The Scientific Council congratulated Professor A. Săndulescu, Vice-Director of JINR during 1983–1986, on being awarded the Commemorative Honorary Medal of JINR, in recognition of his many contributions to the development of JINR and its cooperation with Romanian research centres.

The Scientific Council congratulated Professor L. Ponomarev (Kurchatov Institute, Moscow, Russia) on being awarded the V. Dzhelepov Prize for his outstanding achievements in the field of experimental and theoretical research aimed at addressing applied problems with the use of nuclear physics methods, and thanked him for his informative presentation on this topic.

The Scientific Council congratulated the laureates of the JINR prizes for 2011 — winners of the annual scientific research competition in the fields of theoretical physics, experimental physics, physics instruments and methods, and applied physics.

Elections and Announcement of Vacancies in the Directorates of JINR Laboratories. The Scientific Council appointed by ballot A. Arbizov, M. Hnatič, and A. Isaev as Deputy Directors of the Bogoliubov Laboratory of Theoretical Physics, and A. Popeko and V. Zagrebaev as Deputy Directors of the Flerov Laboratory of Nuclear Reactions (FLNR), until the completion of the terms of office of the directors of their respective laboratories.

The Scientific Council agreed with the proposal by the FLNR Directorate to postpone the election for the third Deputy Director position in this laboratory until the 113th session of the Scientific Council.

The Scientific Council announced the vacancy of the position of the Director of the Dzhelepov Laboratory of

Nuclear Problems. The election for this position will take place at the 114th session of the Scientific Council.

Election of the New Membership of the Scientific Council. The Scientific Council noted the information by the Secretary of the JINR Scientific Council, N. Russakovich, about the forthcoming election of the membership of the Scientific Council for a new five-year term, which took place at the session of the JINR Committee of Plenipotentiaries in March 2013.

General Discussion. The Scientific Council noted with satisfaction the remarkable progress in many key activities of JINR. In spite of the present excellent

achievements in a very broad variety of activities, the Scientific Council cautioned the Directorate that remaining competitive also in the future might well require careful planning for focusing resources on key projects.

In Memory of Čestmír Šimáně. The Scientific Council deeply regretted the sad loss of Professor Č. Šimáně, Vice-Director of JINR during 1973–1977 and member of the JINR Scientific Council during 1956–1989, who had made outstanding contributions to the development of JINR and its international cooperation, especially with Czech and Slovak research centres.

MEETINGS OF THE JINR FINANCE COMMITTEE

A meeting of the JINR Finance Committee was held in Dubna on 23–24 March. It was chaired by N. Pershay, a representative of the Republic of Belarus.

The Finance Committee considered the report «Recommendations of the 111th Session of the JINR Scientific Council (February 2012). Brief Overview of the Results of JINR Activities in 2011» presented by JINR Director V. Matveev.

The Finance Committee took note of the recommendations of the 111th session of the Scientific Council, noting the timely delivery of resources for the priority fields of activities in 2011. It recognized the achievements of JINR scientists in implementing the research programmes, in particular: the completion of the modernization of the IBR-2 reactor and its commissioning with the design parameters; the substantial progress in the implementation of the Nuclotron-NICA and NICA/MPD projects; the outstanding results achieved in the synthesis and chemistry of superheavy elements as marked recently by the recognition of the priority of the Flerov Laboratory of Nuclear Reactions and the Lawrence Livermore National Laboratory (USA) in the discovery of elements 114 and 116; the significant progress in implementation of the DRIBS-III project; the stable operation of all the JINR basic facilities for experimental programmes; the significant advances in the development of the JINR information infrastructure, educational programme and innovation activities.

The Finance Committee recommended that the JINR Committee of Plenipotentiaries (CP) approve the extension of the Cooperation Agreement between the Federal Ministry of Education and Research (BMBF) of Germany and JINR for another term of three years.

Regarding the report «Execution of the JINR Budget in 2011» presented by V. Katrasev, Assistant Director of JINR for Financial and Economic Issues, the Finance Committee recommended that the CP take note of the

information on the execution of the JINR budget in 2011 in expenditure — US\$95 993.0 thousand, and in income — US\$98 704.5 thousand, that the CP empower the company «MS-Audit» to examine the JINR financial activity for the year 2012 and approve the plan for auditing this activity presented by the JINR Directorate. With the recommendations of the Working Group for financial issues of JINR under the CP Chairman taken into account, the Finance Committee recommended that the JINR Directorate address the Plenipotentiaries of the Governments of the JINR Member States with a request to express, until 1 June 2012, their opinions on the new methodology being proposed for calculating the Member States' contributions to the JINR budget, using the rules determining the contributions in compliance with the JINR Charter. The JINR Directorate and the Working Group for financial issues of JINR under the CP Chairman were also recommended to prepare the final version of the methodology for calculating the Member States' contributions to the JINR budget for approval at the meeting of the Finance Committee and at the session of the Committee of Plenipotentiaries in November 2012, in order to begin the use of this methodology in calculating contributions for the year 2014.

In accordance with the JINR Charter, the Finance Committee recommended that the CP suspend the right to vote of the Democratic People's Republic of Korea and of the Republic of Uzbekistan in the Committee of Plenipotentiaries, due to the availability of financial arrears of these Member States in the payment of contributions to the JINR budget.

Based on the information presented by A. Sedyshev, Director of the company «MS-Audit», the Finance Committee recommended that the CP approve the auditors' report concerning the JINR financial activity for 2011 and that it thank «MS-Audit» for the high quality of its audit work.

The Finance Committee thanked E. Krasavin, Director of the Laboratory of Radiation Biology, for the

informative scientific report «Radiobiological Research at JINR Accelerators» presented at this meeting.

A meeting of the JINR Finance Committee was held on 20–21 November. It was chaired by S. Kulhánek, a representative of the Czech Republic.

The Finance Committee heard the report «Recommendations of the 112th Session of the JINR Scientific Council (September 2012). Brief Overview of the Results of JINR Activities in 2012 and Plans for 2013» presented by JINR Director V. Matveev.

The Finance Committee recognized the successful implementation of the decisions of the Scientific Council and the Committee of Plenipotentiaries (CP), based on the Seven-Year Plan for the Development of JINR (2010–2016), in particular concerning the progress of work on the construction and upgrade of the JINR basic facilities: the IBR-2 reactor and its spectrometer complex, the DRIBs-III and NICA projects, as well as the participation of JINR in construction of the Russia-based Tier-1 centre. It was noted that the financing of the projects was proceeding according to schedules.

The Finance Committee expressed the need for making a comprehensive and detailed analysis of the implementation of the Seven-Year Plan for the Development of JINR (2010–2016), based on a report on the first three years of its execution, and for introducing possible amendments, taking into account the actual status of JINR projects. It requested the JINR Directorate to present corresponding materials at the meeting of the Working Group for financial issues of JINR under the CP Chairman and at the meeting of the Finance Committee in March 2013.

Based on the report «Draft Budget of JINR for the Year 2013, Draft Contributions of the Member States for the Years 2014, 2015, and 2016» presented by V. Katrasev, Assistant Director of JINR for Financial and Economic Issues, the Finance Committee recommended that the CP approve the JINR budget for the year 2013 with the total expenditure amounting to US\$143.22 million and the contributions of the Mem-

ber States for the year 2013, determine the provisional volumes of the JINR budgets in income and expenditure for the year 2014 amounting to US\$158.73 million, for the year 2015 amounting to US\$180.58 million, and for the year 2016 amounting to US\$207.24 million, and also adopt the provisional sums of the Member States' contributions and of arrears payments for 2014, 2015, and 2016.

The Finance Committee recommended that the CP allow the JINR Directorate to index the salary and tariff parts of the compensation package of all staff members, taking into account the possibilities afforded by the JINR budget in 2013, in accordance with the JINR Collective Bargaining Agreement for 2011–2013. It also recommended that the CP adopt as a basis the proposed methodology for calculating the Member States' contributions to the JINR budget and introduce it for consideration at the session of the Committee of Plenipotentiaries in March 2013, due to the need for its further elaboration by the Member States.

Concerning the report «Results of Activities of the Legal Entities Established with the Participation of JINR», presented by A. Ruzaev, Assistant Director of JINR for Innovation Development, the Finance Committee recommended that the CP commission the Directorate to carry out regular monitoring of the activities of such entities and report it to the Finance Committee and the Committee of Plenipotentiaries. It was also recommended to commission the Directorate to prepare proposals for the further development of the innovative component in the activities of JINR.

The Finance Committee thanked VBLHEP Director V. Kekelidze for the interesting and informative report «Status of the NICA Project». Taking note of the strategy proposed by the JINR Directorate for the holding of a tender for the construction of the NICA complex in the form of a request for proposals, the Finance Committee recommended that the JINR Directorate finalize the proposed regulations for the tender process and for the tender notice with the remarks and comments taken into account.

MEETINGS OF THE JINR PROGRAMME ADVISORY COMMITTEES

The 35th meeting of the Programme Advisory Committee for Condensed Matter Physics was held on 16–17 January. It was chaired by Professor V. Kantser.

The Chairperson of the PAC presented a short overview of the PAC report delivered at the session of the JINR Scientific Council in September 2011 and information about the implementation of the recommendations of the previous meeting. The PAC congratulated JINR scientists V. Aksenov,

E. Krasavin, and G. Trubnikov on their election as Corresponding Members of the Russian Academy of Sciences.

JINR Vice-Director M. Itkis informed the PAC about the Resolution of the 110th session of the JINR Scientific Council (September 2011) and the decisions of the JINR Committee of Plenipotentiaries (November 2011). The PAC was pleased to note that most of its recommendations taken at the previous meeting concerning JINR research in the areas of condensed matter

physics had been accepted by the Scientific Council and Directorate.

The PAC highly appreciated the progress in the development of the modernized IBR-2 reactor, recommending that, once the license from the Russian Federal Environmental, Industrial and Nuclear Supervision Service (Rostekhnadzor) was obtained for the regular operation of the reactor, the programme of regular physics experiments with the extracted neutron beams be resumed in accordance with the Seven-Year Plan for the Development of JINR. It also recommended the focusing of efforts on the installation of a cryogenic moderator in its planned location at the reactor and on the performance of necessary tests of the moderator during in-power operation of the reactor.

The PAC took note of the review of the proposals collected for experiments at the IBR-2 spectrometer complex. It appreciated the launch of the user programme, noted the great interest of researchers from JINR Member States in neutron scattering studies, and emphasized that the resumption of the user programme should be one major activity at FLNP in 2012. The PAC recommended that FLNP shift the deadline for submission of proposals in order to form an extended portfolio to be presented at the next PAC meeting.

Appreciating the FLNP activity in the development of the user infrastructure at the IBR-2 spectrometer complex, the PAC considered its further extension to be very important for effective realization of the user programme.

The PAC took note of the report about the status of construction of the new multifunctional reflectometer GRAINS with horizontal sample plane at channel 10 of the IBR-2 reactor and recommended approval of the plan for commissioning the initial configuration of the instrument in the first half of 2012. The PAC was informed on the current status of the modernization of the SKAT and EPSILON diffractometers, and noted the progress achieved in this activity. It was expected that these diffractometers would restart operation in 2012 and would be made available for utilization in the user programme. The PAC emphasized the importance of the concentration of efforts on the further modernization of the IBR-2 spectrometers, which would provide conditions for producing world-class scientific results at JINR.

The PAC noted the information about the new data obtained under the MUON project related to the study of interactions of the acceptor centre in germanium at low temperatures. It recommended continuation of this project, inviting the authors to present more information about the plans for this activity at JINR facilities at the next meeting.

The PAC heard with interest the following scientific reports: «Nanofluidic Diode» by P. Apel, «Multi-section Ring Detector of Thermal Neutrons for Diffraction Studies on Microsamples in Axial Geometry» by V. Milkov, and «Prospects for Investigating Determin-

istic Fractals: Extracting Additional Information from Small-Angle Scattering Data» by A. Cherny. The PAC especially noted the report «Advances and Progress in Neutron Imaging» presented by E. Lehmann. In this context, it encouraged FLNP to develop the project of a neutron imaging instrument for IBR-2 and present this project at a future meeting of the PAC.

The PAC took note of the information on the International Scientific School for Young Scientists on Neutron Scattering Methods (31 October–4 November 2011, Dubna) and on the International Scientific School for Young Scientists and Students «Instruments and Methods of Experimental Nuclear Physics. Electronics and Automatics of Experimental Facilities» (7–9 November 2011, Dubna). The PAC appreciated the FLNP efforts towards attracting young specialists to work in these fields at the Laboratory and recommended further annual organization of these schools.

The PAC was informed about the Round Table Italy–Russia «Astrobiology: New Ideas and Research Trends» (10–13 December 2011, Dubna), noting that the range of the subjects discussed at this meeting could be regarded as a new area of research at JINR. The PAC recommended that conferences and seminars on life sciences be held regularly at JINR. It also asked the LRB Directorate to present information at the next meeting on the subdivision for astrobiology research being organized at this Laboratory.

The PAC was pleased with the poster presentations by LIT and BLTP scientists. The poster «Ab Initio Quantum-Chemical Cluster Calculations of Electronic and Magnetic Properties of Systems with Strong Electron Correlations» by L. Siurakshina was selected as the best poster at the session. It also noted two other high-quality posters: «Computer Analysis of Nanoscale Quantum-Dimensional Model Structures in External Fields» by A. Gusev, and «Biodosimetry 1.0: Free Software for Radiation Biological Dosimetry» by O. Afanasyev. The PAC also awarded the winners of the poster session held at its previous meeting.

The 36th meeting of the Programme Advisory Committee for Particle Physics was held on 23–24 January. It was chaired by Professor E. Tomasi-Gustafsson.

JINR Vice-Director R. Lednický informed the PAC about the Resolution of the 110th session of JINR Scientific Council (September 2011) and about the decisions of the JINR Committee of Plenipotentiaries (November 2011). The PAC congratulated JINR scientists V. Aksenov, E. Krasavin, and G. Trubnikov on their election as Corresponding Members of the Russian Academy of Sciences.

The PAC took note of the report on the status of the Nuclotron–NICA project, and congratulated the team for the significant progress achieved in upgrade of the VBLHEP accelerating complex, especially the productive Run 44 of the Nuclotron (November–December

2011). The PAC requested information about a more detailed schedule of the realization of the project up to the first heavy-ion collisions at NICA by 2017 and regular reports from the Run Coordinator on the actual share of the beam delivered to the physics groups.

The PAC was informed about the ongoing work to prepare the NICA White Paper dedicated to the research programme of the NICA project and appreciated the significant amount of work accomplished in this direction. In particular, a qualitatively new aspect is that most of the new contributions make use of the parameters of the NICA facility for both the collider (MPD) and the fixed target (BM@N) experiments. The PAC was pleased to note the broad international involvement in the preparation of this document and recommended continuation of this activity.

The PAC took note of the report on the status of the MPD project. It appreciated the significant progress achieved in the preparation of the project, noting with satisfaction that the MPD team and Detector Advisory Committee had begun their fruitful collaboration, and recommended the preparation of a TDR.

Noting with interest the information about the first meeting of the Detector Advisory Committee (DAC) for the MPD detector, the PAC supported this initiative which is very useful for detailed evaluation of the project realization, including critical assessment of the NICA-MPD physics programme, design of the experimental set-up and recent developments in detector simulation. The PAC endorsed the Committee's recommendations and requested regular presentations of the DAC's reports at its future meetings.

The PAC heard a report on the preparation of a proposal for the SPD experiment with polarized beams at the NICA accelerator facility to study nucleon spin structure. Noting that a large part of the community interested in spin physics would gather in Dubna for the SPIN2012 Symposium, the PAC regarded this as a unique opportunity to inform the international community about the proposal, to attract new collaborations and to consolidate the SPD physics programme.

The PAC took note of the new project «Baryonic Matter at the Nuclotron (BM@N)» to study heavy-ion collisions with beams extracted from the Nuclotron and welcomed the proposed programme. Considering this project, developed in collaboration with GSI, to be very important for its physics potential and for the development of associated instrumentation, the PAC recommended its approval with first priority for one year, until the end of 2012, in order to prepare a comprehensive TDR.

The PAC took note of the reports on the scientific results of the CMS, ATLAS, and ALICE experiments. It emphasized the scientific significance of the results being obtained with the active participation of JINR physicists and encouraged the group members, especially young scientists, to strengthen their efforts

in the data analysis and in the presentation of the results at international conferences and future meetings of the PAC. The PAC looks forward to the submission of detailed projects on the detector upgrades under the general guidance of the JINR Directorate as far as priorities (at CERN and at JINR) and availability of resources are concerned.

The PAC heard the following scientific reports: «DANSS Detector. Reactor Neutrino Problems» by A. Olshevski and «Recent Results from the STAR Beam Energy Scan (BES) Programme at RHIC» by Nu Xu.

The PAC noted with interest the poster presentations in particle physics from young scientists and selected the poster «Precise Measurement of Charm Dimuon Production Cross Section in Neutrino-Nucleon Interactions and Its Various Applications» presented by O. Samoylov to be reported at the Scientific Council's session.

The 35th meeting of the Programme Advisory Committee for Nuclear Physics was held on 26–27 January. It was chaired by Professor W. Greiner.

The Chairperson of the PAC presented a report on the implementation of the recommendations taken at the previous meeting. JINR Vice-Director M. Itkis informed the PAC about the Resolution of the 110th session of the Scientific Council (September 2011) and about the decisions of the Committee of Plenipotentiaries (November 2011).

The PAC was pleased to note that most of the recommendations of the previous PAC meeting concerning JINR research in the areas of nuclear physics had been accepted by the JINR Scientific Council and Directorate.

The PAC congratulated the staff of the Flerov Laboratory of Nuclear Reactions and their colleagues at the Lawrence Livermore National Laboratory (USA) on the recognition of their priority in the discovery of elements 114 and 116. The Committee looks forward to the approval by IUPAC of the names proposed by these laboratories for these elements.

The PAC heard a report on the theme «Non-Accelerator Neutrino Physics and Astrophysics», which is devoted to the search for neutrinoless double-beta decay (NEMO-3, SuperNEMO, and GERDA projects), experiments with reactor antineutrinos (GEMMA — search for the neutrino magnetic moment; reactor diagnostics and investigation of the neutrino properties with the DANSS detector), the search for Dark Matter (EDELWEISS project), and to deep-water investigations with the neutrino telescope at Lake Baikal (BAIKAL project). The PAC appreciated the role of the JINR groups in all these activities and recommended their continuation with first priority in 2013–2015.

Concerning the report on the experimental search for two-neutrino and neutrinoless double-beta decay of isotope-enriched ^{48}Ca , ^{82}Se , ^{96}Zr , ^{130}Mo , ^{116}Cd , ^{128}Te , and ^{150}Nd with the NEMO-3 spectrometer,

at which measurements were completed, the PAC noted the production of results of world-wide significance. The PAC expressed confidence that the construction of the SuperNEMO detector would strongly benefit from the contribution of the Dubna collaboration and recommended approval of these activities for implementation in 2013–2015, with first priority.

The PAC supported the research programme of the FASA-3 project on the study of very hot nuclei produced by the relativistic light ion projectiles of the Nuclotron and recommended its continuation with first priority in 2013–2015. The PAC also recommended continuation of the activities with polarized targets under the GDH&SPASCHARM project.

The PAC heard a report about the status of the DRIBs-III complex. It was pleased to note that the implementation of the DRIBs-III project proceeds according to the Seven-Year Plan for the Development of JINR and to the recommendations of the PAC and the JINR Scientific Council. The PAC also noted that the first SHE-factory to be created on the basis of the new high-current DC-280 cyclotron would allow JINR to keep its leading position in the field of synthesis and study of superheavy nuclei. The PAC recommended continuation of the civil construction of the new experimental hall and fabrication of the new cyclotron as well as the inclusion of the project of reconstruction of the U400 accelerator's experimental hall in the JINR Seven-Year Plan, thus allowing for a considerable expansion of research of nuclear reactions with stable and radioactive ions.

The PAC noted that the availability of a new setup of FLNR for on-line separation of reaction products by means of selective laser ionization would extend the experimental possibilities of the Laboratory in the field of low-energy heavy-ion physics, and, most importantly, in an unexplored region of the nuclear chart, and strongly recommended the start of construction of such a facility in 2012.

The PAC heard a report on the ongoing work for the development of the IREN facility, which concerns the effective introduction of the Toshiba klystron E3730A into the LUE-200 accelerator as a necessary step to increase neutron yield. The need was noted to upgrade the klystron modulator. The PAC recommended continued efforts towards putting IREN into operation with design parameters within the shortest possible time.

The PAC heard the reports «Decay Studies with the OTPC Detector at the ACCULINNA Separator» presented by Z. Janas and «New Method for Solution of Coupled Radial Schrödinger Equations: Applications to Halo Nuclei» presented by S. Ershov.

The PAC was pleased with the poster presentations by young scientists in the field of nuclear physics research. Two best posters were selected for oral presentation at the Scientific Council session in February 2012: «Influence of Proton Shell Closure on Pro-

duction of New Superheavy Nuclei» by A. Kuzmina and «Electronic Atlas of Muonic X Rays» by D. Zinatulina.

The 36th meeting of the Programme Advisory Committee for Condensed Matter Physics was held on 18–19 June. It was chaired by Professor V. Kantser.

The Chairperson of the PAC presented a short overview of the PAC report delivered at the 111th session of the JINR Scientific Council in February 2012 and information about the implementation of the recommendations taken at the previous PAC meeting.

JINR Chief Scientific Secretary N. Russakovich informed the PAC about the Resolution of the 111th session of the JINR Scientific Council and the decisions of the JINR Committee of Plenipotentiaries (March 2012).

The PAC highly appreciated the first stage of operation of the modernized IBR-2 reactor, and recommended implementation of the programme of regular physics experiments in accordance with the user policy and the schedule of the reactor operation in 2012. It also suggested continuation of work for the timely commissioning of the upgraded instruments at the extracted neutron beams, in accordance with the JINR Seven-Year Plan. The PAC recommended active continuation of effort on the adjustment of the helium refrigerator KGU-700 in order to carry out all necessary tests of the cryogenic moderator for neutron channels 7–11 with the in-power operating reactor.

The PAC noted the information on the FLNP programme of applied research, and appreciated the broad range of activities and quality of overviewed results, as well as the effective collaboration with JINR Member States. The PAC expects that the start of regular operation of the IBR-2 reactor will have an additional impact on the development and implementation of the FLNP applied research programme. It also supported the future efforts towards the development of equipment of neutron spectrometers at the IBR-2 spectrometer complex.

The PAC reviewed a number of status reports on upgrades of FLNP instruments. Concerning the information on the progress in constructing the DN-6 diffractometer, it appreciated the activities in the realization of this first-priority instrument, proceeding according to the schedule. The PAC regards the completion of the basic configuration of the DN-6 diffractometer in 2012 as one of the major tasks for the development of the IBR-2 spectrometer complex.

The PAC heard a report on the current state of the Fourier stress diffractometer FSD. It noted the importance of efficient operation in the user policy mode, taking into account the deficiency of such devices in Russia, as well as the opportunity to significantly improve the diffractometer parameters in case of further development of the ZnS scintillator-based detector system. The PAC strongly recommended intensification of work on the further development of the ZnS scintillator-

based detector modules for FSD, as well as the development of new types of ZnS detectors for the neutron diffractometers at the IBR-2 reactor.

The PAC heard a report on the concluding theme «Medical and Biological Research with JINR Hadron Beams» and a proposal for its extension for the period 2013–2015. It emphasized the high significance and practical importance of the results achieved for the last three years in the field of clinical research on proton radiotherapy applications for the treatment of different diseases, as well as in the field of radiation biology. It also noted that clinical research was entering a new phase when it becomes possible to perform the statistical analysis of treatment results and to estimate the effectiveness of the proton radiotherapy techniques developed earlier at JINR. The PAC recommended continuation of this theme in 2013–2015 with first priority and concentration of efforts on the implementation of the proton radiotherapy techniques.

The PAC took note of a report on the opening of a new theme «Biogeochemical Study of Cosmic Matter on Earth and in Nearby Space. Research on the Biological and Geochemical Features of the Early Earth» for the period 2013–2015. The PAC underlined the importance of the investigations on this theme related to biogeochemical studies of space dust, studies of bio-fossils in meteorites and ancient terrestrial rocks, and studies of space matter, based on JINR facilities. For taking a recommendation concerning the opening of this theme, the PAC invited the authors to present, at the next meeting, the detailed scientific proposal and the financial plan of its realization, as well as suggestions for involvement of JINR Member States in this activity.

The PAC considered a new proposal for the opening of the theme «A Multimodal Platform for Raman and Nonlinear Optical Microscopy and Microspectroscopy for Condensed Matter Studies» for the period 2013–2014. Regarding CARS microscopy and microspectroscopy as complementary to existing methods at JINR, the PAC recommended the opening of this theme for the proposed period with first priority. It also suggested using Raman microscopy in combination with neutron diffraction methods.

The PAC noted a report concerning the results obtained at PSI (Switzerland) under the MUON project, which are a good example of JINR international cooperation in condensed matter physics, illustrating new opportunities of particle and nuclear physics in materials characterization. The PAC recommended continuation of the MUON project and invited the authors to expand their activity at JINR facilities and to involve research institutes of JINR Member States for using muon characterization techniques.

The PAC heard with interest the following scientific reports on the various fields of condensed matter physics: «Polarized Neutron Optics» by Yu. Nikitenko,

«Statistical Properties of Directed Avalanches» by N. Bunzarova, and «Dynamics of Polymer Solutions with Memory» by V. Lisý. The PAC appreciated the high quality of the presented reports and recommended continuation of the practice of scientific reports at the PAC meetings.

The PAC was pleased with the poster presentations by LRB, BLTP, and FLNR scientists in different fields of radiation biology and condensed matter physics. The poster «Influence of Accelerated ^{18}O Ions on the Growth of HPRT-Mutant Subclones of Chinese Hamster Cells» by P. Bláha was selected as the best poster at the session. The PAC also noted two other high-quality posters: «3D Simulation of Tunneling Dynamics in a Two-Component Bose–Einstein Condensate» by A. Novikov and «Molecular Dynamics Simulation in Modeling of SANS: Solutions of Monocarboxylic Acids in Decalin» by R. Eremin.

The 36th meeting of the Programme Advisory Committee for Nuclear Physics was held on 21–22 June 2012. It was chaired by Professor W. Greiner.

The Chairperson of the PAC presented a report on the implementation of the recommendations taken at the previous meeting. JINR Vice-Director M. Itkis informed the PAC about the Resolution of the 111th session of the Scientific Council (February 2012) and about the decisions of the Committee of Plenipotentiaries (March 2012).

The PAC noted with satisfaction the approval, by the International Union of Pure and Applied Chemistry, of the names «flerovium» and «livermorium» for elements 114 and 116, in honour of the Flerov Laboratory of Nuclear Reactions and the Lawrence Livermore National Laboratory (USA).

The PAC heard a report on the results of numerous activities within the theme «Improvement of the JINR Phasotron and Design of Cyclotrons for Fundamental and Applied Research», focused on the design and improvement of accelerators for hadron therapy applications. Upgrade of the power supply system of the Phasotron has led to the improvement of the working conditions for the staff and to the reduction of power consumption by 70 kW/h.

Following the agreement between the company IBA (Ion Beam Applications) and JINR, assembly of the C235 cyclotron was done at DLNP, which is in preparation for the hospital therapy centre in Dimitrovgrad (Russia). A stable 60-MeV proton beam was extracted from the AIC-144 cyclotron (Kraków, Poland) and was used for the first time for successful treatment of the eye melanoma.

The PAC recommended continuation of this programme within the theme «Improvement of the JINR Phasotron and Development of Cyclotrons for Fundamental and Applied Research» in 2013–2015 with first priority.

The PAC heard a report on the theme «Physics of Light Mesons». Its scientific programme concerns investigations of the production, decay and interaction of light mesons aimed at determining the symmetries and the interaction dynamics. The experiments are carried out at the intermediate-energy accelerators in Jülich, Mainz, Villigen, Gatchina, and Dubna. The theme includes six projects: MEG-PEN, SPRING, PAINUC, TRITON, GDH&SPASCHARM, and MUON.

The MEG-PEN project is devoted to the study of the rare and forbidden decays $\pi^+ \rightarrow e^+\nu$ and $\mu^+ \rightarrow e^+\gamma$ at PSI. For the process $\mu^+ \rightarrow e^+\gamma$, a record for the upper limit of the decay probability has already been achieved. The SPRING project is concerned with polarization phenomena in hadron interactions. The measurements using polarized beams and/or polarized jet targets are of special interest, allowing for deeper understanding of the spin-dependent characteristics of interactions. Pion production, deuteron breakup and hard bremsstrahlung processes involving formation of 1S_0 diprotons result in important conclusions on the interaction properties and dynamics. Polarization build-up in the proton beam using the spin-filtering method has been demonstrated. New measurements are planned with a longitudinally polarized beam. In the PAINUC experiment, π^\pm ^4He interactions are studied using the self-shunting streamer chambers developed at DLNP.

The PAC recommended continuation of investigations on the theme «Physics of Light Mesons» and on the SPRING и MEG-PEN-II projects in 2013–2015 with first priority.

The PAC discussed in detail a report concerning the development of ECR ion sources at the Flerov Laboratory of Nuclear Reactions. It supported the efforts of FLNR in this direction, noting that this activity is an important part of the scientific programme allowing the Laboratory to reach a considerable increase of beam intensity needed for further studies.

The PAC heard with interest the scientific reports «Summary of Experimental Results on Collinear Cluster Tripartition Studies» presented by D. Kamanin and «Neutron Lifetime Measurement in Material Traps: State of the Art and Prospects» presented by Yu. Pokotilovsky.

The PAC was pleased with the high quality of the presentations of new results and proposals by young scientists in the field of nuclear physics research and selected the best three posters: «Supersymmetric Fission of Transactinide Nuclei» by G. Knyazheva, «The ^{10}He Resonant States Observed in Correlation Measurements of the $^8\text{He} (^3\text{H}, p) ^{10}\text{He}$ reaction» by S. Krupko, and «Moss Biomonitoring in Albania Using GIS Technologies» by Z. Goryainova. They were recommended to be reported at the session of the Scientific Council in September 2012.

The 37th meeting of the Programme Advisory Committee for Particle Physics was held on 25–26 June 2012. It was chaired by Professor E. Tomasi-Gustafsson.

JINR Vice-Director R. Lednický informed the PAC about the Resolution of the 111th session of JINR Scientific Council (February 2012) and about the decisions of the JINR Committee of Plenipotentiaries (March 2012).

The PAC took note of the report on the activities carried out under the Nuclotron–NICA project. It appreciated the significant progress achieved in upgrading the VBLHEP accelerator complex and congratulated the Laboratory staff on the successful Run 45 (February–March 2012) of the Nuclotron when deuteron beam energy was increased up to 4.5 GeV/u for the first time.

The PAC received information about a meeting of the NICA Machine Advisory Committee (MAC) which was held at JINR on 21–22 June 2012. It recognized the significant progress in the development of the NICA project, and supported the proposed strategy for the review and the construction of the NICA complex with full involvement of the JINR Members States. The PAC recommended that the VBLHEP Directorate concentrate maximum resources on this flagship project.

The PAC took note of the progress towards the NICA White Paper dedicated to the research programme of the NICA project and recommended continuation of this important work. It appreciated, in particular, the new contributions to the scientific programme of the NICA facility and the holding of the NICA–FAIR bilateral workshop «Matter at Highest Baryon Densities in the Laboratory and in Space» (Frankfurt Institute for Advanced Studies, 2–4 April 2012).

The PAC approved the recommendations of the MPD Detector Advisory Committee (DAC). During the meetings of the DAC with the MPD team, a number of issues were discussed in depth, including staging of the detector, material budget within the detector acceptance, extending the Ecal to cover the forward direction, particle tracking in the forward direction, and performance of the dilepton measurement. According to the PAC, the fruitful dialogue with the MPD team is very important and should be continued for the benefit of the MPD programme. The PAC took note of the report on the implementation of its recommendations for the MPD project and approved the proposed changes for the Multi-Purpose Detector, including the Ecal addition in forward direction, which requires an increase of the magnet length by 1.1 m.

The PAC took note of the consolidated proposal «Study of Hadron Production in Hadron–Nucleus and Nucleus–Nucleus Collisions at the CERN SPS» (NA61/SHINE) and approved the scientific programme of the project for heavy-ion physics and neutrino physics related measurements.

The PAC appreciated the substantial hardware contributions of the JINR groups to external experiments

and encouraged them to focus their efforts on physics analysis. The PAC noted with interest the reports on the participation of the JINR group in the HADES, STAR, and NA62 experiments. It recognized the importance of the obtained results and recommended continuation of these projects until the end of 2015. The PAC made a similar decision on the SANC project, noting with satisfaction the fruitful international collaboration developed within the project.

The PAC commended the projects aiming to study hyper-nucleus and spin physics at the Nuclotron — HyperNIS, ALPOM-2, and DSS, taking into account that the Nuclotron provides all necessary conditions for the realization of the projects according to the request for beam time allocations. The PAC recommended continuation of these projects until the end of 2015.

The PAC took note of the report on the project «Development of Prototype Units for a Complex of Carbon Radiotherapy Using Nuclear Beams of the Nuclotron». It recognized the high importance of this research and recommended supporting this activity.

The PAC took note of the written reports on the themes: «R&D of Straw Detectors», «Studies of Polarization Phenomena and Spin Effects at the JINR Nuclotron-M Facility», including a proposal of the research programme at the Nuclotron with polarized beams, «Study of Processes with Symmetry Violation», and recommended continuation of these themes until the end of 2015.

The PAC noted the important results obtained by the ALICE, ATLAS, and CMS experiments. It strongly welcomed the growing participation of JINR researchers in the analysis of experimental data from the LHC. It also welcomed the intention of the JINR groups to participate in the detector upgrades under the general guidance of the JINR Directorate and in accordance with the general plans of the collaborations. The PAC recommended approval of the new project «R&D for the ALICE Photon Spectrometer» for 2012–2013, looking forward to the presentation of detailed projects for the upgrades of the ATLAS and CMS detectors at the next meeting.

The PAC heard with interest the scientific reports presented at the meeting: «Precision Tests of the Standard Model and Search for SUSY at the LHC» by A. Arbuzov and «Measurements of Reactor Antineutrino Oscillations in the Daya Bay Experiment» by A. Olshevski. The PAC congratulated the JINR group and the Daya Bay collaboration for the important discovery of a non-zero θ_{13} angle of the PMNS neutrino mixing matrix.

The PAC noted the poster presentations in particle physics by young scientists of BLTP, DLNP, and VBLHEP, and selected the poster «The BES-III Experiment» presented by I. Denysenko to be reported at the session of the Scientific Council in September 2012.