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 in Dubna on 25–26 March. It was chaired by the Plenipotentiary of the Government of the Slovak Republic to JINR, S. Dubnička.

Having examined the report «Major Results of JINR's Activity in 2003–2009 and Prospects for the Development of JINR in 2010–2016» presented by JINR Director A. Sissakian, the Committee of Plenipotentiaries (CP) highly appreciated the results of JINR's activity in 2003–2009; the successful implementation of the Scientific Council's recommendations concerning the scientific programme of JINR, the upgrade of the basic facilities, and the construction of the new facility IREN; approved the activity of the Institute Directorate for the implementation of the JINR Plan for Research and International Cooperation in 2009, noting with satisfaction the implementation of 103 % of the budget in income in 2009.

The Committee appreciated the significant progress in upgrading the Nuclotron-M/NICA accelerator complex and noted that during the 40th and 41st runs of the Nuclotron-M (2009–2010) the physics research programme was fulfilled completely and stable operation of the accelerator complex at high intensity was demonstrated. For the first time at the Nuclotron, the acceleration of ions with $q/A \sim 1/3$ was accomplished, and xenon ions ($A = 124$) were accelerated up to the energy 1.5 GeV/nucleon. Stable work of the magnetic system at 1.8 T was shown. Also for the first time a new operation mode for the ring was successfully tried and tested to allow long runs with routine breaks to be carried out without helium losses and without increasing liquid nitrogen consumption.

Taking note of the information on the first experience of JINR physicists in data taking in the LHC experiments (ATLAS, ALICE, and CMS), the CP congratulated the JINR teams for having fulfilled their obligations in the construction of the detectors and the commissioning phase and recognized the important contribution of JINR staff members to the first data analysis phase.

The CP noted the significant progress achieved in the modernization of the DRIBs cyclotron complex in 2009. It also recommended accelerating the upgrade of IREN-1 to rapidly reach a higher intensity of the source and make it really comparable with powerful neutron sources in Europe.

The Committee noted with satisfaction that modernization of the IBR-2 reactor was proceeding in full accordance with the technical and financial plans, the accomplishment of the physical start-up of the modernized IBR-2M reactor being the main task for 2010.

The CP highly appreciated the new efforts of the Directorate towards development of the Institute's partnership programmes with research centres of the Member States and other countries, as well as with international scientific research organizations. It noted, in particular, the importance of the agreements signed in January–March 2010: the Agreement between CERN and JINR concerning Scientific and Technical Cooperation in High-Energy Physics, the Cooperation Agreement between JINR and the Budker Institute of Nuclear Physics of the Siberian Branch of the Russian Academy of Sciences, the Protocol of the Inter-Laboratory Collaborative Agreement between the Brookhaven National Laboratory and JINR, the Accord between the Fermi National Accelerator Laboratory and JINR concerning Scientific Cooperation, and the Cooperation Agreement between JINR and the National Nuclear Research University «Moscow Engineering Physics Institute».

The Committee recognized the successful implementation of the JINR scientific programme in 2003–2009. It noted, in particular, the results produced in 2009 in the experiment on the synthesis of element 117 and congratulated the staff of the Flerov Laboratory of Nuclear Reactions on the discovery of this element.

The CP noted the importance of the further support of the JINR educational programmes to ensure that the future scientific and technological workforce needs of the Member States are met and of the broad programme of innovative activities to be implemented using the opportunities afforded by the special economic zone «Dubna».

The Committee noted with satisfaction the establishment of the International Innovative Nanotechnology Centre for the countries of the Commonwealth of Independent States as a non-profit partnership at the foundation forum held in Dubna in December 2009.

The CP congratulated the editorial boards of «Physics of Elementary Particles and Atomic Nuclei» and «Physics of Elementary Particles and Atomic Nuclei, Letters» on the 40th and 25th anniversaries of these journals.

Based on the report «Results of the Meeting of the JINR Finance Committee Held on 22–23 March 2010» presented by A. Tuleushev, Chairman of the Finance Committee, the CP approved the Protocol of this meeting and the report of JINR for the year 2008:

- on the execution of the budget in expenditure — US$60 143.6 thousand,
- with the summary account as of 01.01.2009 — US$86 171.0 thousand.

Based on the report «Results of the Audit of the Institute's Financial Activity for the Year 2008» presented by A. Sedyshev, Director of the MS-Audit company, the CP approved the auditors' report concerning the financial activity of JINR examined for the year 2008 and thanked the MS-Audit for the high quality of its audit work.

Regarding the report «Execution of the JINR Budget in 2009» presented by V. Katrasev, Assistant Director of JINR for Financial and Economic Issues, and taking the recommendations of the Finance Committee into account, the CP took note of the information on the execution of the JINR budget in 2009:

- in expenditure — US$72 068.4 thousand,
- in income — US$74 181.9 thousand.

The CP empowered the MS-Audit company to examine the Institute's financial activity for the year 2009 and approved the plan for auditing this activity presented by the JINR Directorate.

Taking note of the report presented by S. Dubnička, Chairman of the Committee of Plenipotentiaries, concerning the election of the Director of JINR, the CP unanimously elected Professor A. Sissakian as Director of JINR for another term (5 years), in accordance with the JINR Charter and the Regulation for the Director of JINR.

Based on the information concerning membership of the JINR Scientific Council, presented by N. Russakovich, Chief Scientific Secretary of JINR, the CP accepted the resignation from membership of Professor T. Hallman (BNL, USA) and thanked him for his successful work as member of the JINR Scientific Council. The Committee elected Professor P. Jenni (CERN, Switzerland) as a new member of the JINR Scientific Council.

The Committee thanked Professor V. Kekelidze, Director of the Veksler and Baldin Laboratory of High Energy Physics, for the informative scientific report «Programme of Applied Research Planned at NICA» presented at this session.

The Committee of Plenipotentiaries deeply regretted the sad loss of Professor A. Tavkhelidze, Plenipotentiary of the Government of Georgia to JINR and member of the JINR Scientific Council, who had made outstanding contributions to the organization and pursuance of research in the field of theoretical physics and to the development of the JINR international collaboration.

The Committee of Plenipotentiaries also deeply regretted the sad loss of Professor Ts. Vylov, Vice-Director of JINR during 1992–2005, who had made outstanding contributions to the development of scientific collaboration between JINR and research centres of the Member States and other countries.

An extraordinary session of the Committee of Plenipotentiaries of the Governments of the JINR Member States was held in Dubna on 7 May. It was chaired by the Plenipotentiary of the Government of the Slovak Republic to JINR, S. Dubnička.

The CP took the following decisions:

— To terminate prematurely, as of 1 May 2010, the powers of the Director of JINR, Alexei Sissakian, due to his death.

— To appoint JINR Vice-Director Mikhail Itkis as Acting Director of JINR until the election of a new Director of JINR at a session of the Committee of Plenipotentiaries of the Governments of the Member States of the Joint Institute for Nuclear Research.

A regular session of the Committee of Plenipotentiaries of the Governments of the JINR Member States was held in Dubna on 26–27 November. It was chaired by the Plenipotentiary of the Government of the Slovak Republic to JINR, S. Dubnička.

The Committee of Plenipotentiaries considered the report «Recommendations of the 108th Session of the JINR Scientific Council (September 2010). Brief Overview of the Results of JINR Activities in 2010 and Plans for 2011» presented by JINR Acting Director M. Itkis. The CP approved the recommendations of the 108th session of the Scientific Council as well

as the JINR Topical Plan of Research and International Cooperation for 2011, noting with satisfaction:

— the successful implementation of the recommendations of the 106th and 107th sessions of the Scientific Council concerning the scientific programme of JINR and the upgrade of the basic facilities;

— the impressive advances of JINR in the fields of the synthesis and chemistry of superheavy elements;

— the completion of the preparatory phase of the physical start-up of the modernized pulsed reactor IBR-2M;

— the significant progress in upgrading the VBLHEP accelerator complex, the vigorous implementation of the work schedule for the Nuclotron-M and NICA projects as well as the successful spring (2010) run of the Nuclotron-M. The CP took note of the recommendations on the current status of the NICA project, taken by the Machine Advisory Committee for the Nuclotron-M/NICA Accelerator Complex, and supported the Scientific Council's recommendation to develop a road map for optimizing the external participation in the NICA project and the associated experiments MPD and SPD.

The CP welcomed the work being done by the JINR Directorate, the FLNR management and staff on the projects of new set-ups proposed within the framework of the DRIBs-III programme in accordance with the JINR seven-year plan and the long-term vision for the future of this field.

The CP congratulated the laureates of the 2009 G. Flerov Prize — Professors S. Galès (GANIL, Caen, France), D. Guillemaud-Mueller (INP, Orsay, France), and Yu. Penionzhkevich (FLNR, JINR), awarded for the research «Synthesis and Properties of Exotic Nuclei near the Nucleon Drip-Line».

The CP noted with satisfaction the first experiments at the IREN facility and recommended acceleration of its upgrade in order to reach rapidly the project intensity of 10^{14} n/s.

The CP also noted the visible contributions by JINR physicists to the first scientific results produced in the LHC experiments (ALICE, ATLAS, and CMS) and recommended that the Directorate concretize in the very near future the scope and areas of JINR's participation in the programme of upgrades of the LHC and its detectors.

The CP further noted a number of important results in the fields of solid-state physics and radiobiology, the commissioning of the unique laser CARS microscope purposed for research in nanobiotechnology, as well as the good performance of the internal computing infrastructure and Grid services.

The CP welcomed the further development of activities under the 2010 CERN–JINR Agreement, formulated in two additional protocols concerning collaboration in the area of accelerator physics and technology and concerning the joint development of computer programs for JINR's administrative and financial activities.

The CP approved the Memorandum of Cooperation between JINR and the Foundation for Development of the Centre for Research and Commercialization of New Technologies in Skolkovo (Foundation «Skolkovo»), signed on 20 September 2010, on joint activities in the realization of innovative projects, the establishment of innovation infrastructure, the involvement of students, postgraduates and young scientists in innovation efforts with the aim of attracting additional resources for the development of JINR experimental facilities.

The CP supported the efforts being taken by the JINR Directorate to ensure social package for the JINR employees, in particular, concerning the started construction of housing for young scientists and the increase in salaries of the JINR staff in 2010.

The CP supported the proposal of the Plenipotentiary of the Government of the Republic of Bulgaria to JINR to name one of the alleys on the site of the Dzhelepov Laboratory of Nuclear Problems after the Bulgarian scientist Professor Ts. Vylov, who made outstanding contributions to the development of JINR.

Based on the report «Draft Budget of JINR for the Year 2011, Draft Contributions of the Member States for the Years 2012, 2013, and 2014» presented by V. Katrasev, Assistant Director of JINR for Financial and Economic Issues, the Committee approved the JINR budget for the year 2011 with the total expenditure amounting to US$98.793 million, as well as the contributions of the Member States for the year 2011. The Committee determined the provisional volumes of the JINR budgets in income and expenditure for the year 2012 amounting to US$117.76 million and for the year 2013 amounting to US$137.29 million, and also adopted the provisional sums of the Member States' contributions and of arrears payments for 2012 and 2013.

Having approved as temporary, for the period from 2014 to 2015, the current method of determination of the Member States' contributions to the JINR budget in proportion to the annual increase of the Institute's budget proposed by the JINR Directorate and the Working Group for financial issues of JINR under the CP Chairman, the Committee determined the provisional volume of the JINR budget in income and expenditure for the year 2014 amounting to US$158.80 million, and adopted the provisional sums of the Member States' contributions and of arrears payments for 2014.

The CP commissioned the JINR Directorate and the Working Group for financial issues of JINR under the CP Chairman to update the principles and methods of calculation of the Member States' contributions to the JINR budget in view of the parameters of the UN's new scale of assessments for 2013–2015.

Based on the report «Results of the Meeting of the JINR Finance Committee Held on 23–24 November 2010», presented by L. Mardoyan, Chairman of the Finance Committee, the Committee of Plenipotentiaries

GOVERNING AND ADVISORY BODIES OF THE JOINT INSTITUTE FOR NUCLEAR RESEARCH

COMMITTEE OF PLENIPOTENTIARIES OF THE GOVERNMENTS OF THE JINR MEMBER STATES

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

Finance Committee

One delegate
from each Member State

SCIENTIFIC COUNCIL

Chairman: A. Sissakian
Co-Chairman: I. Wilhelm (Czech Republic)
Scientific Secretary: N. Russakovich

O. Bakhram-ogly Abdinov	Azerbaijan	V. Kadyshevsky	Russia	J. Ružička	Slovak Republic
I. Antoniou	Greece	M. Kovalchuk	Russia	V. Sahni	India
A. Antonov	Bulgaria	K. Królas	Poland	D. Sangaa	Mongolia
M. Budzyński	Poland	G. Kulipanov	Russia	Š. Šaro	Slovak Republic
Gh. Căta-Danil	Romania	V. Kuvshinov	Belarus	N. Shumeiko	Belarus
A. Duisebaev	Kazakhstan	A. Logunov	Russia	A. Skrinsky	Russia
M. Ehliashvili	Georgia	M. Mateev	Bulgaria	P. Spillantini	Italy
J. Ellis	Switzerland	V. Matveev	Russia	M. Spiro	France
S. Galès	France	T. Muminov	Uzbekistan	Ch. Stoyanov	Bulgaria
N. Giokaris	Greece	D. L. Nagy	Hungary	H. Stöcker	Germany
B. Grinev	Ukraine	W. Nawrocik	Poland	Gh. Stratan	Romania
F. Guzmán Martínez	Cuba	Nguyen Manh Shat	Vietnam	V. Strazhev	Belarus
Chen Hesheng	China	Nguyen Van Hieu	Vietnam	A. Tavkhelidze	Georgia
R.-D. Heuer	Switzerland	Pak Ben Seb	D. P. Republic of Korea	C. Turtă	Moldova
M. Itkis	Russia	G. Piragino	Italy	I. Wilhelm	Czech Republic
P. Jenni	Switzerland	G. Pogosyan	Armenia	G. Zinoviev	Ukraine

Programme Advisory Committee for Particle Physics

Chairperson: E. Tomasi-Gustafsson (France)
Scientific Secretary: A. Nagaitsev

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 A. Sissakian

Vice-Director M. Itkis

Vice-Director R. Lednický

Chief Scientific Secretary N. Russakovich

Chief Engineer G. Shirkov

Bogoliubov Laboratory of Theoretical Physics

Director
V. Voronov

Research in

- symmetry properties of elementary particles
- field theory structures
- interactions of elementary particles
- theory of atomic nuclei
- theory of condensed matter

Veksler and Baldin Laboratory of High Energy Physics

Director
V. Kekelidze

Research in

- structure of nucleons
- strong interactions of particles
- resonance phenomena in particle interactions
- electromagnetic interactions
- relativistic nuclear physics
- particle acceleration techniques
- interactions of multicharged ions in a wide energy range

Dzhelepov Laboratory of Nuclear Problems

Director
A. Olshevsky

Research in

- strong, weak and electromagnetic interactions of particles, particle structure
- nuclear structure
- nuclear spectroscopy
- mesoatomic and mesomolecular processes
- particle acceleration techniques
- radiobiology

Flerov Laboratory of Nuclear Reactions

Director
S. Dmitriev

Research in

- properties of heavy elements, fusion and fission of complex nuclei, cluster radioactivity, 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

Frank Laboratory of Neutron Physics

Director
A. Belushkin

Research in

- 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 radiography methods
- dynamic characteristics of the pulsed reactor IBR-2

Laboratory of Information Technologies

Director
V. Ivanov

Research in

- provision of operation and development of the JINR computing and networking infrastructure
- optimal usage of international computer networks and information systems
- modern methods of computer physics, development of standard software

Laboratory of Radiation Biology

Director
E. Krasavin

Research in

- radiation genetics and radiobiology
- photo radiobiology and molecular biophysics systems
- radiation protection physics

University Centre

Director
S. Pakuliak

Directions of activities:

- 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

approved the Protocol of this meeting of the Finance Committee.

Based on the information «Calling of the Elections and Nomination of Candidates for the Position of the Director of JINR» presented by CP Chairman S. Dubnička, the Committee called the election of the JINR Director for 25 March 2011, at the next CP session, due to the premature termination of the powers of the Director of JINR and in accordance with the JINR Charter and the Regulation for the Director of JINR.

Regarding the report presented by A. Ruzaev, Assistant Director of JINR for Innovation Development, «Plans for JINR Innovation Activities in 2011», the CP supported the plans of the JINR Directorate for innovation activities in 2011, noting the importance of establishing innovation infrastructure around the Institute and modern communications with state and business in the sphere of innovations. It also approved the investment agreements:

— signed on 31 August 2010 among JINR, the State Corporation «Russian Corporation of Nanotechnologies», the OJSC Concern «Radiotechnical and Information Systems», the CJSC «IT Firm. Information Technologies», and the OJSC «Special Economic Zones», to regulate JINR's participation in the realization of the project for the establishment of an infrastructural nanotechnology centre in Dubna;

— signed on 20 September 2010 among JINR, the State Corporation «Russian Corporation of Nanotechnologies», the LLC «Detectors of Explosives and Drugs», and the LLC «Neutron Technologies», to regulate JINR's participation in the realization of the project «Expansion of Production of Multipurpose Detectors for Identification of a Wide Range of Substances Based on Tagged Neutron Technology».

Following the information presented by N. Russakovich, Chief Scientific Secretary of JINR, «By-election to Membership of the JINR Scientific Council», the CP elected Professor Ch. Stoyanov (INRNE, Sofia, Bulgaria) as a new member of the JINR Scientific Council.

The CP heard with interest the scientific reports «Problems and Prospects for the Development of Neutrino and Nuclear Astrophysics» presented by V. Matveev, Director of INR, RAS, and «Identification and Studies of Chemical Properties of New Elements of the Periodic Table» by S. Dmitriev, Director of FLNR, JINR, and thanked the speakers.

SESSIONS OF THE JINR SCIENTIFIC COUNCIL

The 107th session of the JINR Scientific Council took place on 18–19 February. It was chaired by JINR Director A. Sissakian and Professor I. Wilhelm of Charles University (Prague, Czech Republic).

Professor A. Sissakian presented a report «Prospects for the Development of JINR in 2010–2016». Vice-Directors M. Itkis and R. Lednický informed the Council about the results of implementation of the Programme of the Scientific Research and Development of JINR (2003–2009) and about the plans of activities for 2010–2016.

The following reports of activities were heard at the session: «Status of the JINR Educational Programme» by S. Pakuliak, Acting Director of the University Centre, «Applied Research and Innovative Activities at JINR» by A. Olshevsky, Director of the Dzhelepov Laboratory of Nuclear Problems, and «Status and Objectives of the International Innovative Nanotechnology Centre for the Countries of the Commonwealth of Independent States» by A. Ruzaev, Assistant Director for Innovative Development.

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).

The Scientific Council heard a report by Professor V. Kadyshevsky related to the activities of the journals «Physics of Elementary Particles and Atomic Nuclei» and «Physics of Elementary Particles and Atomic Nuclei, Letters», and congratulated the editorial boards on the anniversaries of these journals.

The session included the elections of Deputy Directors of the Veksler and Baldin Laboratory of High Energy Physics and of the Laboratory of Radiation Biology, also the award of the 2009 B. Pontecorvo Prize and the scientific presentations by the prizewinners. The jury's recommendations for the JINR prizes for 2009 were reported by Professor M. Itkis.

The Scientific Council heard the scientific reports presented by Professors J. Cleymans and Yu. Oganessian.

The Scientific Council adopted the following Resolution.

Taking note of the comprehensive report presented by JINR Director A. Sissakian, the Scientific Council appreciated the decision of the Committee of Plenipotentiaries (CP) to increase the JINR budget by 20.7% in 2010, and asked the CP to ensure the requested financial support, despite the present difficult financial period in some Member States, for the successful realization of the approved seven-year plan.

The Scientific Council was pleased to note the successful implementation of most of its recommendations, taken at the previous session. It also appreciated the new efforts of the Directorate towards optimization of the JINR partnership programme with research centres of the Member States and other countries, as well as with international scientific research organizations, in particular, the signature in January 2010 of the Agreement between CERN and JINR concerning Scientific and Technical Cooperation in High-Energy Physics.

Regarding the reports by Vice-Directors M. Itkis and R. Lednický, the Scientific Council recommended the concentration of human and financial resources on realization of three major basic facilities of JINR — NICA/MPD, DRIBs-III, and IBR-2M with spectrometers — according to a master planning, looking forward to being regularly informed about the progress of the implementation of this recommendation.

Regarding the report by the Acting Director of the University Centre (UC), S. Pakuliak, the Scientific Council emphasized the need for continued support of the UC in addressing priority tasks of training young scientific and engineering personnel for the Member States of the Institute. It also appreciated the UC's effort to enhance work with school teachers from Member States, in particular through the organization, together with CERN, of the annual schools for teachers of physics that will be held at CERN and JINR. The Scientific Council welcomed the increase in the number of students of JINR-based departments of the universities located in Dubna, which creates conditions for effective training of researchers and for rapid involvement of young scientists in the research programme of JINR.

Taking note of the report «Applied Research and Innovative Activities at JINR» presented by DLNP Director A. Olshevsky, the Scientific Council recommended continuation and extension of these activities in accordance with the seven-year plan of JINR development.

The Scientific Council noted the report by JINR Assistant Director for Innovative Development A. Ruzaev about the status and objectives of the International Innovative Nanotechnology Centre for the countries of the Commonwealth of Independent States (CIS). This centre was established as a non-profit partnership at the foundation forum, held in Dubna in December 2009, and currently includes 15 organizations from 9 CIS countries. The Scientific Council highly appreciated the initiative of the JINR Directorate to establish this Centre in cooperation with the Russian Research Centre «Kurchatov Institute» and the International Association of Academies of Sciences, and looks forward to being informed at future sessions about the progress of its activities.

The Scientific Council asked the JINR Directorate to prepare written materials (brochures, electronic presentations, etc.) about the applied research and innovative activities including the new Nanotechnology Centre, to be used as information for the interested partners in the Member States.

The Scientific Council noted the information presented by Professor A. Kovalenko about the decision taken by the JINR Directorate to start the publication of a journal dedicated to heavy-ion physics research in 2010.

The Scientific Council concurred with the recommendations made by the PACs at their January 2010 meetings as reported at this session by Professors E. Tomasi-Gustafsson, W. Greiner, and P. Alekseev.

Particle Physics Issues. The Scientific Council endorsed the main lines of the JINR Programme of Particle Physics Research proposed for the period 2010–2012 in accordance with the new seven-year JINR development plan.

The Scientific Council appreciated the significant progress in upgrading the VBLHEP accelerator complex, noting that during the autumn run of the Nuclotron the obligations concerning the research programme had been fulfilled and stable operation of the accelerator complex at high intensity had been demonstrated.

The Scientific Council thanked the chairman, members and experts of the Machine Advisory Committee for the Nuclotron-M/NICA accelerator complex for their work, which plays an extremely important role in the project realization. The Council supported the PAC's recommendation on the preparation of a project for realization of the next stage of the NICA complex construction to be presented at a future PAC meeting.

The Scientific Council noted the substantial progress in scrutinizing all basic elements of the MPD detector and supported the PAC's recommendation on the preparation of a project for the first-stage realization of the multipurpose set-up MPD to be presented at the next PAC meeting.

Noting the advances in the preparation of the white paper for the NICA programme on the mixed phase and spin physics, the Scientific Council recommended continuation of the work to elaborate a competitive research programme in view of its complementarity with studies planned at CERN, RHIC, and FAIR, in particular with the CBM detector.

The PAC took note of the reports on the first experience of JINR physicists in data taking in the ALICE, ATLAS, and CMS experiments and congratulated these teams for having fulfilled their obligations in the construction of the detectors and the commissioning phase. The PAC highly appreciated the presentation of the first physics results, which witness the overall good operation of the detectors, and also recognized the important contribution made by LIT to the first data analysis phase.

The Scientific Council supported the PAC's recommendations on JINR's participation, within the suggested time scales, in the new projects: «Physics Research at the LHC. ATLAS, ALICE, CMS», «STAR at RHIC», and «PANDA. Experiments at FAIR», as

well as on the continuation of the current activities and on the closure of 13 projects, as outlined in the PAC report.

The Scientific Council congratulated the directorates of JINR and DLNP and the entire staff of the Institute on the 60th anniversary of the commissioning of the JINR Synchrocyclotron — the first accelerator at Dubna. A wealth of important scientific results, including 13 registered discoveries, has been produced at this accelerator.

Nuclear Physics Issues. The Scientific Council endorsed the main lines of the JINR Programme of Nuclear Physics Research proposed for the period 2010–2012 in accordance with the new seven-year JINR development plan.

The Scientific Council recommended the acceleration of the upgrade of IREN-1 to rapidly reach higher intensity of the source and to make it really comparable with powerful neutron sources in Europe. It was also recommended that additional funding be provided for supplying the necessary equipment for the next phase of IREN and for its full-scale completion.

The Scientific Council suggested that the FLNR Directorate consider, during the modernization phase of the U400 cyclotron complex, the possibility to develop a uranium beam of large intensity ($\sim 10^{12}$ s^{-1}). This will allow the exploration, in further perspective, of alternative pathways to extend the nuclear chart towards even heavier and longer living nuclei.

The Scientific Council supported the PAC's recommendation that FLNR should start experiments with the MASHA mass spectrometer in 2010 and develop plans towards further improvement of this set-up.

Noting the significant progress achieved in the upgrade of the VASSILISSA separator in close collaboration with IN2P3 (France), the Scientific Council recommended that the modernization of this separator, together with the GABRIELA system for detection of nuclear reaction products, should be continued according to the proposed plans.

The Scientific Council supported the PAC's recommendation on the new project «Detector of Reactor Antineutrinos Based on Solid-State Plastic Scintillators» (DANSS) to be implemented within the theme «Non-accelerator Neutrino Physics and Astrophysics».

Condensed Matter Physics Issues. The Scientific Council was pleased to note that modernization of the IBR-2 reactor is proceeding in full accordance with the technical and financial plans, the accomplishment of the physical start-up of the IBR-2M reactor being the main task for 2010. The Scientific Council supported the PAC's recommendation for the completion of the current theme «Upgrade of the IBR-2 Complex» and for the opening of the new first-priority theme «Development of the IBR-2M Reactor with a Complex of Cryogenic Neutron Moderators» for 2011–2013. The major objective of the new activity is to increase the efficiency of using the IBR-2M modernized reactor and to develop it into a world-wide leading-edge neutron facility equipped with excellent spectrometers and thereby attracting users from all over the world.

The Scientific Council endorsed the main areas of research in nanosystems conducted at FLNP and FLNR and supported the PAC's recommendations for the continuation of modernization of the facilities at these laboratories for nanoscale physics and nanomaterial studies.

The Scientific Council supported FLNP's plans to upgrade the IBR-2M reactor beams for the SKAT/EPSILON-MDS diffractometers and endorsed the main fields of research to be carried out as part of the GRAINS project.

The Scientific Council highly appreciated the pool of expertise developed by LRB specialists in the radiation protection of high-energy accelerators and their activity concerning the design of the NICA complex radiation shielding. It also noted the activity of LRB scientists on the application of nuclear physics methods to the studies of the elemental composition of the Solar System planet surfaces and the biology of living systems. The Scientific Council supported the PAC's recommendation on the necessity of creating a special beam channel at the modernized Nuclotron for medical and radiobiological experiments with intermediate-energy heavy ions.

The Scientific Council appreciated the high level of activities in condensed matter science pursued by the research groups at FLNP, BLTP, FLNR, and LRB.

As proposed by the JINR Directorate, the Scientific Council appointed Professor J. Cleymans (University of Cape Town, South Africa) as a new member of the PAC for Particle Physics and Professor F. Piquemal (CEN, Bordeaux, France) as a new member of the PAC for Nuclear Physics for a term of three years.

The Scientific Council highly appreciated the scientific reports «Maximal Net Baryon Density in the Energy Region Covered by NICA» presented by Professor J. Cleymans and «Experiments on the Synthesis of Element 117» presented by Professor Yu. Oganessian, and thanked the speakers. The Scientific Council especially noted the results of the experiments on the synthesis of element 117 and congratulated the staff of the Flerov Laboratory on the discovery of this element and on the synthesis of new isotopes of elements 115, 113, 111, 109, 107, and 105.

The Scientific Council approved the Jury's recommendations on the JINR prizes for 2009. It congratulated the laureates of the 2009 B. Pontecorvo Prize: Professor A. Dolgov (ITEP, Moscow, Russia), awarded for his fundamental results on neutrino oscillations and kinetics in cosmology, and Professor H. Sobel (University of California, Irvine, USA), awarded for his significant contributions to the field of neutrino oscillation experiments, and thanked them for their informative presentations on these topics.

The Scientific Council appreciated the report presented by the Editor-in-Chief of «Physics of Elemen-

tary Particles and Atomic Nuclei», V. Kadyshevsky, related to the activities of the journals «Physics of Elementary Particles and Atomic Nuclei» and «Physics of Elementary Particles and Atomic Nuclei, Letters». These journals, published since 1970 and 1984 respectively, have been maintaining a high standard of publications, an excellent selection of authors from the JINR Member States and leading research laboratories worldwide, and, as a result, a significant citation index. The Scientific Council congratulated the editorial boards on the 40th and 25th anniversaries of these journals and wished them further successful work for the benefit of fundamental science.

The Scientific Council elected by ballot Professors G. Trubnikov and A. Vodopyanov as Deputy Directors of the Veksler and Baldin Laboratory of High Energy Physics (VBLHEP) and Professors G. Timoshenko and P. Yagova as Deputy Directors of the Laboratory of Radiation Biology, until the completion of the terms of office of the directors of these laboratories. The Scientific Council confirmed the vacancies of the positions of two Deputy Directors of VBLHEP. The elections for these positions will take place at the 108th session of the Scientific Council.

The Scientific Council deeply regretted the sad loss of Professor Yu. Gaponov, member of the JINR PAC for Nuclear Physics, who had made outstanding contributions to the development of scientific collaboration between JINR and Russian research centres. The Scientific Council also deeply regretted the sad loss of Professor Ts. Vylov, Vice-Director of JINR during 1992–2005, who had made outstanding contributions to the development of scientific collaboration between JINR and research centres of the Member States and other countries.

The 108th session of the JINR Scientific Council took place on 23–24 September. It was chaired by JINR Acting Director M. Itkis and Professor I. Wilhelm of Charles University (Prague).

Professor M. Itkis related the decisions of the regular (March 2010) and extraordinary (May 2010) sessions of the Committee of Plenipotentiaries of the Governments of the JINR Member States, and made an overview of major results of JINR's activity in 2010.

The Scientific Council was presented with reports on the progress of implementation of the Seven-Year Plan for the Development of JINR (2010–2016) in the main fields of research and on the status of JINR's major basic facilities.

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).

M. Itkis presented the Directorate's proposal for the award of the title «Honorary Doctor of JINR». The award of the 2009 G. Flerov Prize as well as the presentation of diplomas to the winners of JINR prizes for the year 2009 took place at the session.

The Scientific Council adopted the following Resolution.

In Memory of Colleagues. The Scientific Council paid tribute to the memory of Professor Alexei Sissakian. As Director of the Joint Institute for Nuclear Research, he made outstanding contributions to the development of JINR as a major international centre for fundamental research, as well as to the education of young scientists and the development of innovative activities, and played a leading role in the establishment of the current and future JINR research programmes based on broad international cooperation. His inspiring scientific leadership and personal qualities are sorely missed.

The Scientific Council also commemorated Professors Matey Mateev and Albert Tavkhelidze, members of the Scientific Council, who made outstanding contributions to the advancement of science and to the development of collaboration between JINR and research centres in Member States.

General Considerations. The Scientific Council took note of the decisions of the regular (March 2010) and extraordinary (May 2010) sessions of the Committee of Plenipotentiaries of the Governments of the JINR Member States, as well as of the overview of major results of JINR's activity in 2010.

The Scientific Council recognized the significant scientific accomplishments of JINR scientists in 2010 in the fields of particle physics, nuclear physics and condensed matter physics, as well as in the areas of information technology, the education of young scientists, and innovative developments. As examples in these fields, the Scientific Council noted:

— impressive advances in the fields of the synthesis and chemistry of superheavy elements and in the studies of the structure of light neutron-rich nuclei;

— the impressive increase of new results from the LHC with visible contributions by JINR physicists (ALICE, ATLAS, and CMS experiments);

— new achievements in both accelerator-based neutrino physics (OPERA experiment) and non-accelerator neutrino physics and astrophysics (GEMMA and EDELWEISS experiments);

— a number of important results in the field of solid-state physics and radiobiology;

— the high quality of theoretical studies related to the major areas of the JINR scientific programme;

— good performance of the internal computing infrastructure and Grid services;

— successes in the educational programme, now including schools for high-school teachers (together with CERN).

The Scientific Council highly appreciated the new efforts of the Directorate towards further development of the JINR partnership programmes, noting in particular the bilateral agreements signed by JINR in 2010 with

the Budker Institute of Nuclear Physics, the Brookhaven National Laboratory, the Fermi National Accelerator Laboratory, and the Moscow Engineering Physics Institute.

The Scientific Council noted the decision taken at the extraordinary session of the Committee of Plenipotentiaries (CP) to appoint JINR Vice-Director M. Itkis as Acting Director of JINR until the election of a new director of the Institute at a future CP session.

The Scientific Council noted the election of Professor P. Jenni (CERN) as a new member of the Scientific Council.

Recommendations on Reported Activities. The Scientific Council took note of the reports about the progress in implementation of the Seven-Year Plan for the Development of JINR (2010–2016) in the fields of particle physics and high-energy heavy-ion physics, presented by JINR Vice-Director R. Lednický, and in the fields of low- and intermediate-energy nuclear physics, nuclear physics with neutrons, and condensed matter physics, presented by Chief Scientific Secretary N. Russakovich.

The Scientific Council also noted the status of the projects of the major basic facilities of JINR, namely the Nuclotron-M, the NICA/MPD facility, the cyclotron complex DRIBs-III, the IBR-2M reactor and neutron spectrometers, which were presented in the reports by VBLHEP Director V. Kekelidze, VBLHEP Deputy Director G. Trubnikov, FLNR Director S. Dmitriev, and FLNP Director A. Belushkin.

The Scientific Council noted with satisfaction that the schedule of construction and upgrade of JINR's home facilities is in general being well kept. It emphasized the importance of following this schedule also in the future, especially in case of the NICA project, and invited the JINR Directorate to develop a road map for optimizing the external participation in the NICA project and the associated experiments MPD and SPD.

The Directorate was also invited to concretize in the very near future the scope and areas of JINR's participation in the programme of upgrades of the LHC and its detectors.

Recommendations in Connection with the PACs. The Scientific Council concurred with the recommendations made by the PACs at their June 2010 meetings as reported at this session by their Chairpersons 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 the vigorous implementation of the work schedule for the Nuclotron-M and NICA projects. It was pleased to note that the spring (2010) run of the Nuclotron-M was successful, and congratulated the VBLHEP Directorate and staff for achieving their goals. It welcomed the recent signature of the protocols and agreements with CERN, the Budker INP, and GSI concerning collaboration on the NICA project.

The Scientific Council supported the PAC in encouraging the JINR management to publish an international call for experiments at the Nuclotron-M as soon as reliable performance figures can be presented.

Noting the first scientific results produced at the LHC by the ALICE, ATLAS, and CMS collaborations, the Scientific Council concurred with the recommendation of the PAC that at its future meetings there should be regular presentations of the data analysis that focus on JINR physicists' contributions and activities and provide information how much of this work is performed at JINR using, e.g., the Grid.

The Scientific Council supported the PAC's recommendations on the new projects CBM, MPD, and TRANSMUTATION, as well as on the continuation of the current activities beyond 2010. It also noted the PAC's intention to closely follow the progress in the projects CBM and MPD through regular reports and if necessary by appointing external referees.

The Scientific Council joined the PAC in encouraging the publication in the journal «Physics of Elementary Particles and Atomic Nuclei, Letters» of the reports delivered at the PAC session as poster presentations.

Nuclear Physics Issues. The Scientific Council appreciated the results obtained within the framework of the theme «Nuclear Physics with Neutrons — Fundamental and Applied Investigations», in particular experiments on neutron optics, the asymmetry of α particles and γ-quanta emission in neutron capture by light nuclei. The start-up of Phase 1 of the IREN facility and first experiments with it were noted with great satisfaction.

The Scientific Council supported continuation of the research programme in nuclear physics using neutrons via the new theme «Investigations in the Field of Nuclear Physics with Neutrons» during 2011–2013, with first priority. The upgrade of IREN should be accelerated in order to reach rapidly the project intensity 10^{14} neutrons per second. The improvement of the experimental base at the IREN and IBR-2M facilities was strongly supported. The development of the programme for nuclear data measurements for innovative reactor technologies in the IREN facility was also recommended.

The Scientific Council welcomed the work being done by the FLNR Directorate on the projects of new set-ups proposed within the framework of the DRIBs-III programme. It noted that further progress in experimental studies of reactions with radioactive beams and properties of superheavy elements at the Flerov Laboratory would depend on the parameters of these set-ups, and emphasized that these should meet modern requirements in accordance with the JINR seven-year plan and a long-term vision for the future of this field.

Condensed Matter Physics Issues. The Scientific Council appreciated the ongoing efforts by the FLNP staff for the preparation of the reactor IBR-2M for the physical start-up in the 4th quarter of 2010, and for the

installation, adjustment and alignment of the new reactor equipment, as well as for the project of cryogenic moderators.

The Scientific Council supported the main fields of joint research in the area of nanoscale physics and nanomaterials performed by FLNP, BLTP and research institutes in the JINR Member States.

The Scientific Council was pleased to note the progress in the realization of the DN-6 diffractometer project, and supported the PAC's recommendation about completion of DN-6 basic configuration by late 2011. Concurring that the modernization of the NERA-PR spectrometer should be given high priority, the Scientific Council considered the financial support from grants of Poland's Plenipotentiary to be very important for the full replacement of the NERA-PR neutron mirror guide in 2010–2011.

The Scientific Council emphasized the importance of taking advantage of JINR's potential for research focusing on different aspects of the biological effect of high-energy heavy charged particles, the use of nuclear physics methods in investigations of planets and physical calibration of space instruments, and radiation-caused failures of spacecraft electronics. The Scientific Council supported the JINR Directorate's initiative to establish an International Joint Scientific Council of the Russian Academy of Sciences on the issues of general and space radiobiology, which would focus on realizing major research projects in this area using charged-particle accelerators.

Common Issues. The Scientific Council concurred with the PACs that the theme «Information, Computer and Network Support of JINR's Activity» should be continued for the period 2011–2013 with special emphasis on data protection in the Grid environment, the development of collaborations with JINR Member States, and Grid use beyond the LHC programme.

Memberships of the PACs. As proposed by the JINR Directorate, the Scientific Council re-appointed Professor E. Tomasi-Gustafsson as Chairperson of the PAC for Particle Physics for a term of two years and appointed Professor Nu Xu (LBNL, Berkeley, USA) as a new member of this PAC for a term of three years.

As proposed by the JINR Directorate, the Scientific Council appointed Professor A. Steuwer (Lund University, Sweden) as a new member of the PAC for Condensed Matter Physics to replace Professor F. Currell. The Scientific Council thanked the outgoing member Professor G. Pépy for his very successful work as member of this PAC.

The Scientific Council deeply regretted the sad loss of Professor František Spurný, a member of the PAC for Condensed Matter Physics during 2005–2010, who had significantly contributed to the strengthening of collaboration between JINR and Czech research centres.

The Scientific Council asked to be informed regularly of the amount of rotation among the members of the PACs and of the areas of their expertise.

Awards. The Scientific Council endorsed the JINR Directorate's proposal to award the title «Honorary Doctor of JINR» to Professor V. Filchenkov in recognition of his outstanding contributions to the advancement of science and the education of young scientists.

The Scientific Council congratulated Professors S. Galès, D. Guillemaud-Mueller, and Yu. Penionzhkevich on being awarded the 2009 G. Flerov Prize for the research «Synthesis and Properties of Exotic Nuclei near the Nucleon Drip-Line». It thanked Professor S. Galès for his informative presentation on this topic.

The Scientific Council congratulated the laureates of the JINR prizes for 2009 — winners of the annual scientific research competition in the fields of theoretical physics, experimental physics, physics instruments and methods, and applied physics.

Vacancies in the Directorates of JINR Laboratories. The Scientific Council confirmed the vacancies of the positions of two Deputy Directors of VBLHEP. The elections for these positions will take place at the 109th session of the Scientific Council.

General Discussion. A number of important points were brought in during the general discussion. In particular, the Scientific Council

— thanked the Acting Director for providing information on the procedure and time-scale for the choice of the next Director; it looks forward to receiving more information in due course, and is ready to offer any advice that may be requested by the CP;

— requested the JINR Directorate to present at its next session a report on the conditions, recruitment and retention of young scientists;

— encouraged the holding of poster sessions with presentations by young scientists and requested that the best be selected for presentation to the Scientific Council;

— requested the JINR Directorate to improve the electronic availability of documents, e.g., via Indico.

MEETINGS OF THE JINR FINANCE COMMITTEE

A meeting of the JINR Finance Committee was held in Dubna on 22–23 March. It was chaired by A. Tuleushev, representative of the Republic of Kazakhstan.

The Finance Committee considered the report «Major Results of JINR's Activity in 2003–2009 and Prospects for the Development of JINR in 2010–2016» presented by JINR Director A. Sissakian. The

Committee highly appreciated the results of JINR's activity in 2003–2009, approved the activity of the Institute Directorate for the implementation of the JINR Plan for Research and International Cooperation in 2009, and noted with satisfaction that the implementation of the budget in income from the contributions of the Members States and resources received under the agreements and protocols on science and technology cooperation in 2009 amounted to 103%.

The Finance Committee noted the successful implementation of the Scientific Council's recommendations concerning the scientific programme of JINR, the upgrade of the basic facilities, and the construction of the new facility IREN, as well as the efforts taken by the Institute Directorate to provide the resources required for the modernization of the Nuclotron-M/NICA accelerator complex, the cyclotron complex DRIBs, and the IBR-2 reactor, and for the development of the IREN-1 facility.

The Finance Committee appreciated the new efforts of the Directorate towards development of the Institute's partnership programmes with research centres of the Member States and other countries, as well as with international scientific research organizations, which will enable the Institute to attract additional financial and intellectual resources for the development of its basic facilities.

The Finance Committee particularly noted the results produced in 2009 in the experiment on the synthesis of element 117 and congratulated the staff of the Flerov Laboratory of Nuclear Reactions on the discovery of this element.

The Finance Committee noted the importance of the further support of the JINR educational programmes to ensure that the future scientific and technological workforce needs of the Member States are met and of the broad programme of innovative activities to be implemented using the opportunities afforded by the special economic zone «Dubna».

Based on the information on the results of the audit of the Institute's financial activity for the year 2008 presented by A. Sedyshev, Director of the MS-Audit company, the Finance Committee recommended that the CP approve the auditors' report concerning the financial activity of JINR examined for the year 2008 and the report of JINR for the year 2008 on the execution of the budget in expenditure — US$60 143.6 thousand, with the summary account as of 01.01.2009 — US$386 171.0 thousand, and thanked the MS-Audit company for the high quality of its audit work.

Based on the report «Execution of the JINR Budget in 2009», 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 2009 in expenditure — US$72 068.4 thousand, in income — US$74 181.9 thousand. It was also recommended that the CP empower the MS-Audit company to examine the Institute's financial activity for the year 2009 and approve the plan for auditing this activity, presented by the JINR Directorate.

The Finance Committee thanked A. Olshevsky, Director of the Dzhelepov Laboratory of Nuclear Problems, for the informative scientific report «Programme of Innovative Developments at JINR» presented at this meeting.

A meeting of the JINR Finance Committee was held in Dubna on 23–24 November. It was chaired by L. Mardoyan, a representative of the Republic of Armenia.

Regarding the report «Recommendations of the 108th Session of the JINR Scientific Council (September 2010), Brief Overview of the Results of JINR Activities in 2010 and Plans for 2011» presented by JINR Acting Director M. Itkis, the Finance Committee took note of the recommendations of the 108th session of the Scientific Council about the progress of activities for the first year of the Seven-Year Plan for the Development of JINR for 2010–2016, of the information presented by the JINR Directorate on the implementation of the JINR Plan of Research and International Cooperation in 2010, and of the plans for JINR activities in 2011.

The Finance Committee noted the timely delivery by the JINR Directorate of resources for the ongoing research programmes according to the priorities adopted by the Committee of Plenipotentiaries (CP), which largely contributed to JINR impressive advances in the fields of the synthesis and chemistry of superheavy elements, to the successful completion of the modernization of the pulsed reactor IBR-2M, to the significant progress in upgrading the VBLHEP accelerator complex, to the first experiments at the IREN facility, and to the visible contributions by JINR physicists to the first scientific results produced in the LHC experiments (ALICE, ATLAS, and CMS).

The CP noted the further development of activities under the 2010 CERN–JINR Agreement, formulated in two additional protocols concerning collaboration in the area of accelerator physics and technology and concerning the joint development of computer programs for JINR's administrative and financial activities.

The CP supported the efforts being taken by the JINR Directorate to ensure social package for the JINR employees, in particular concerning the started construction of housing for young scientists and the increase of salaries of the JINR staff in 2010.

Based on the report «Draft Budget of JINR for the Year 2011, Draft Contributions of the Member States for the Years 2012, 2013, and 2014» 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 2011 with the total expenditure amounting to US$98.793 million and the contributions of the Member States for the year 2011, determine the provisional

volumes of the JINR budgets in income and expenditure for the year 2012 amounting to US$117.76 million and for 2013 amounting to US$137.29 million, and also adopt the provisional sums of the Member States' contributions and of arrears payments for 2012 and 2013.

It was also recommended to approve as temporary, for the period from 2014 to 2015, the current method of determination of the Member States' contributions to the JINR budget in proportion to the annual increase of the Institute's budget proposed by the JINR Directorate and the Working Group for financial issues of JINR under the CP Chairman, to determine the provisional volume of the JINR budget in income and expenditure for the year 2014 amounting to US$158.80 million, and to adopt the provisional sums of the Member States' contributions and of arrears payments for 2014.

The Finance Committee recommended that the CP commission the JINR Directorate and the Working Group for financial issues of JINR under the CP Chairman to update the principles and methods of calculation of the Member States' contributions to the JINR budget in view of the parameters of the UN's new scale of assessments for 2013–2015.

Regarding the report presented by A. Ruzaev, Assistant Director of JINR for Innovation Development, «Plans for JINR Innovation Activities in 2011», the CP supported the plans of the JINR Directorate for innovation activities in 2011, noting the importance of establishing innovation infrastructure around the Institute and modern communications with state and business in the sphere of innovations. It also approved the investment agreements:

— signed on 31 August 2010 among JINR, the State Corporation «Russian Corporation of Nanotechnologies», the OJSC Concern «Radiotechnical and Information Systems», the CJSC «IT Firm. Information Technologies», and the OJSC «Special Economic Zones», to regulate JINR's participation in the realization of the project for the establishment of an infrastructural nanotechnology centre in Dubna;

— signed on 20 September 2010 among JINR, the State Corporation «Russian Corporation of Nanotechnologies», the LLC «Detectors of Explosives and Drugs», and the LLC «Neutron Technologies», to regulate JINR's participation in the realization of the project «Expansion of Production of Multipurpose Detectors for Identification of a Wide Range of Substances Based on Tagged Neutron Technology».

The Finance Committee thanked FLNR Director A. Belushkin for the interesting and informative scientific report «Modernization of the IBR-2 Reactor. Prospects for the Development of the Spectrometer Complex».

MEETINGS OF THE JINR PROGRAMME ADVISORY COMMITTEES

The 32nd meeting of the Programme Advisory Committee for Particle Physics was held on 14–15 January. It was chaired by Professor E. Tomasi-Gustafsson.

The members of the PAC honoured the memory of Professor Jan Nassalski who had successfully worked in this PAC for a long period of time and who had made outstanding contributions to the development of the scientific collaboration between JINR and Polish research centres.

The PAC took note of the information presented by JINR Vice-Director R. Lednický about the resolution of the 106th session of JINR Scientific Council (September 2009) and the decisions of the JINR Committee of Plenipotentiaries (CP) (November 2009). The PAC appreciated the decision to increase the JINR budget by 20.7% in 2010, also the importance of the annual increase of the budget in 2010–2016 planned according to the budget forecast for this seven-year period.

The PAC congratulated the Directorate and the international staff of JINR on the complete and successful realization of the previous seven-year scientific programme. It was pleased to note that the CP had accepted the concept of the Seven-Year Plan for the Development of JINR 2010–2016 and approved this plan, taking into account the recommendations of the PACs and the Scientific Council. The CP also supported the efforts being taken towards integration of the JINR basic facilities into the common European research infrastructure.

The PAC noted that the Scientific Council highly appreciated the progress made in the effort to upgrade the Nuclotron to meet the performance required for the future NICA/MPD programme.

The PAC took note of the report on the status of the Nuclotron-M project, presented by JINR Deputy Chief Engineer G. Trubnikov, and appreciated the significant progress in upgrading the VBLHEP accelerator complex and the rigorous implementation of the work schedule. The PAC was pleased to note that during the autumn run in 2009 the obligations concerning the research programme were fulfilled and stable operation of the accelerator complex at high intensity was demonstrated.

Concerning the report by the Chairman of the Machine Advisory Committee (MAC) for the Nuclotron-M/NICA accelerator complex, Professor B. Sharkov, the PAC noted that the expertise performed by the MAC had confirmed the feasibility of the NICA project

and recommended preparing a project on realization of the next stage of the NICA complex construction for presentation at a future PAC meeting. The PAC took note of the report by G. Trubnikov on the preparation of the NICA Technical Design Report and appreciated the substantial progress in this work.

Concerning the report on the preparation of the MPD Conceptual Design Report, presented by VBLHEP Director V. Kekelidze, the PAC supported the basic ideology of the construction of the detector which will be unique in acceptance and efficiency for the registration of charged hadrons in the energy field under study as well as the strategy of stage-by-stage construction of this detector, recognizing the substantial progress in scrutinizing all basic elements. The PAC recommended preparing a project of the first-stage realization of the multipurpose set-up MPD — the starting stage — for presentation at its next meeting. It also recommended coordinating the work on the machine, the detector, and the physics goals and consolidating the collaboration also through external experts and advice.

Concerning the report by BLTP Deputy Director A. Sorin on the ongoing preparation of the white paper for the NICA programme on the mixed phase and spin physics, the PAC recommended continuation of the work to elaborate a competitive research programme in view of its complementarity with studies planned at CERN, RHIC, and FAIR.

The PAC took note of the report by JINR Chief Engineer G. Shirkov on the progress for ongoing developments at JINR related to the ILC and recommended further participation in this work.

The PAC took note of the reports on the first experience of JINR physicists in data taking in the ALICE, ATLAS, and CMS experiments and congratulated these teams for having fulfilled their obligations in the construction of the detectors and the commissioning phase. The PAC highly appreciated the presentation of the first physics results, which witness the overall good operation of the detectors, and also recognized the important contribution made by the Laboratory of Information Technologies to the first data analysis phase.

The PAC suggested supporting JINR's participation in the physics research programmes at the LHC on the basis of a five-year term and recommended approval of the projects on JINR's participation in the physics research at the LHC detectors ATLAS, ALICE, and CMS for execution until the end of 2014, as well as allocation of sufficient resources for the participation of JINR in the data taking and analysis. The Committee looks forward to receiving regular reports on these activities at its future meetings.

The PAC recommended approval of JINR's participation in the project «STAR at RHIC» until the end of 2012, supporting the participation in the beam energy scan and in the polarized proton–proton data programme which will provide world-class results and represent an important training ground for the NICA collider project.

The PAC appreciated the ongoing activity at JINR and recommended approval of JINR's participation in the project «PANDA. Experiments at FAIR» until the end of 2014, considering the time scale of the project.

The PAC took note of the reports on JINR's participation in the HADES project and on the theme «Development of High-Precision Straw Detectors» and recommended continuation of these activities until the end of 2012.

The PAC took note of the report on the NA48 project and highly appreciated the obtained results. Due to the completion of this experiment, the Committee recommended that the JINR Directorate close this project (JINR's participation) and continue work on the data analysis under the theme «Study of Rare Charged Kaon Decays in Experiments at the CERN SPS (NA62 Project)».

The PAC took note of the written report on the OKAPI project and highly appreciated the uniqueness of the obtained results. The Committee recommended that the JINR Directorate close this project (JINR's participation) and continue the research work also under the NA62 project.

Noting the high quality of the accomplished work on the projects NIS, ALPOM, pHe3, and LNS, the PAC recommended that the JINR Directorate close these projects and continue the research work under the new projects HyperNIS, ALPOM-2, and DSS.

The PAC recommended that the JINR Directorate close the projects STRELA, DELTA–SIGMA, DELTA-2, MARUSYA, CLIC, and E391a (JINR's participation), as well as «Development and Introduction of Compact Electron and Ion Accelerators for Applied Purposes».

The PAC appreciated the poster presentations by young scientists in the field of particle physics research and recommended that this form of presentations be included in the agenda of its future meetings.

The 31st meeting of the Programme Advisory Committee for Condensed Matter Physics was held on 18–19 January. It was chaired by Professor V. Kantser.

The Chairperson of the PAC presented a brief overview of the PAC report delivered at the session of the JINR Scientific Council in September 2009 and information about the implementation of the recommendations of the previous PAC meeting.

The PAC took note of the information by JINR Vice-Director M. Itkis about the resolution of the 106th session of the JINR Scientific Council (September 2009) and the decisions of the JINR Committee of Plenipotentiaries (November 2009), and was pleased to note that most of the recommendations of the previous PAC meeting concerning JINR research in the areas of condensed matter physics had been accepted by the JINR Scientific Council and Directorate.

The PAC took note of the information by the JINR Directorate on the activities related to the International Innovative Nanotechnology Centre of the CIS countries and asked the Directorate to present at its future meetings more information about specific innovative projects that are planned to be implemented at this Centre.

Concerning the report on the theme «Upgrade of the IBR-2 Complex», the PAC appreciated the significant advances that had been made in upgrading the IBR-2 reactor which was proceeding in accordance with the technical and financial plans. The PAC members highly appreciated the visit to the IBR-2 reactor and the explanations given by FLNP Chief Engineer A. Vinogradov, and recommended continuation, in the future, of the positive practices of visiting JINR facilities.

The PAC discussed in detail the report on the proposal of a new theme «Development of the IBR-2M Reactor with a Complex of Cryogenic Neutron Moderators» for the period 2011–2013 and recommended opening this theme with first priority. The PAC highly appreciated the main tasks of the theme, which are to increase the efficiency of using the IBR-2M modernized reactor, and suggested that the JINR Directorate strongly support implementation of the major activities in this area planned for 2010.

The PAC took note of the reports on the concluding themes «Information, Computer and Network Support of JINR's Activity» and «Mathematical Support of Experimental and Theoretical Studies Conducted by JINR», highly appreciated the achieved results and recommended continuation of the research within the theme «Mathematical Support of Experimental and Theoretical Studies Conducted by JINR» in the period 2011–2013. The PAC recommended that LIT present additional information on the theme «Information, Computer and Network Support of JINR's Activity» in the context of the activities underway at FLNP, FLNR, LRB, and BLTP. The decision about the extension of this theme will be taken at the next PAC meeting.

The PAC highly appreciated the research of nanosystems conducted at FLNP and FLNR, noting the novelty and significance of nanoscale physics and nanomaterials studies, which are in line with the topics of the seven-year plan, and recommended continuation of efforts towards upgrading the facilities, oriented at these laboratories to nanoscale physics and nanomaterials studies. It also encouraged that the JINR Directorate launch a proposal call for research institutes of the JINR Member States in the area of these studies.

The PAC heard with interest the report on the modernization of the beam line of the IBR-2M reactor for the SKAT/EPSILON-MDS diffractometers and supported the FLNP plans to put the new guide system into operation at the start-up of IBR-2M at the end of 2010. The PAC took note of the information about the status of the GRAINS project and appreciated the pace of the project realization. It recommended focusing attention on the necessity to develop the FLNP scientific programme on the liquid-containing interfaces prior to the GRAINS start-up within the framework of the available international collaborations with other neutron centres.

The PAC heard with interest the report on the radiation research conducted at LRB, noted the significant experience of the LRB specialists in the field of radiation protection of high-energy accelerators, and appreciated their activity concerning the design of the NICA complex radiation shielding. The PAC welcomed the promising research work connected with the application of nuclear physics methods to the research on the elemental composition of the Solar System planet surfaces and with biology of living systems of various levels. The PAC supported the project of a special beam channel at the modernized Nuclotron for medical and radiobiological experiments with intermediate-energy heavy ions and recommended that the JINR Directorate find the possibility to realize this proposal.

The PAC heard with much interest the scientific reports: «Combined Action of Ultraviolet (UV-B) and γ-Radiation as an Escalating Risk Factor for Cataract Formation in Mice» presented by K. Muranov, «First-Principle Simulations of the Structure and Properties of Metallic Glasses» presented by V. Kazimirov, «The Casimir Effect for Existing and New Materials» presented by I. Pirozhenko, and «Complementarity of Neutron and Synchrotron Research» presented by Ch. Vettier. Noting the high quality of these reports, the PAC recommended that FLNP present at its next meeting an analytical review of the future objectives of the development of the neutron scattering technique for the next 10 years at the IBR-2M reactor, taking into account the competitiveness and complementarity with synchrotron radiation sources.

The PAC noted the information about the II Advanced Courses for CIS countries «Synchrotron and Neutron Studies of Nanosystems» (SYN-nano-2009) (29 June – 30 July 2009, Dubna–Moscow) and about the all-Russian scientific school for youth «Modern Neutronography: Interdisciplinary Studies of Nanosystems and Materials» (12–20 October 2009, Dubna). The PAC stressed that the programmes of these scientific meetings reflected the current status of research in the fields of nanomaterials, nanotechnology, condensed matter physics, and related areas, and recommended further regular holding of these scientific meetings.

The PAC was pleased with the poster presentations by scientists from FLNP, FLNR, and BLTP in the fields of physics and nanotechnology, noted the concluding report by T. Tropin, and recommended that the best poster presentation be selected by the PAC members at its future meetings.

The 31st meeting of the Programme Advisory Committee for Nuclear Physics was held on 25–26 January. It was chaired by Professor W. Greiner.

The members of the PAC honoured the memory of Professor Tsvetan Vylov who, as Vice-Director of JINR, had been the coordinator of the PACs for Nuclear Physics and for Condensed Matter Physics for many years. He had made outstanding contributions to the development of JINR and its cooperation with research centres of the Member States and other countries. The members of the PAC also honoured the memory of Professor Yuri Gaponov who had worked extremely successfully in this PAC for a long period of time.

The PAC was informed by Vice-Director M. Itkis about the resolution of the 106th session of the Scientific Council (September 2009) and the decisions of the Committee of Plenipotentiaries (November 2009).

The PAC took note of the report presented by JINR Chief Scientific Secretary N. Russakovich and endorsed the main lines of the JINR Programme of Nuclear Physics Research proposed for the period 2010–2012 in accordance with the new seven-year JINR development plan.

First Experiments at IREN-1. The PAC recommended the acceleration of the upgrade of IREN-1 to rapidly reach the higher intensity of the source and to make it really comparable with powerful neutron sources in Europe. It also recommended that additional funding be provided for supplying the necessary equipment for the next phase of IREN and for its full completion.

Experiments on the Synthesis of Element 117. The PAC congratulated the staff of the Flerov Laboratory of Nuclear Reactions on the discovery of element 117 and new isotopes of elements 115, 113, 111, 109, 107, and 105. The Committee suggested considering, during the modernization phase of the U400 cyclotron complex, the possibility to develop a uranium beam of high intensity ($\sim 10^{12}$ s^{-1}) to enable the exploration, in further perspective, of alternative pathways to extend the nuclear chart towards even heavier and longer living nuclei.

New Project «Detector of Reactor Antineutrinos Based on Solid-State Plastic Scintillators» (DANSS). The PAC noted that this detector could be used for real-time monitoring of reactor parameters, as well as for fundamental investigations of neutrino properties (neutrino magnetic moment, oscillations, etc.). The Committee recommended the approval of the DANSS project to be implemented with high priority.

Status of the MASHA Set-Up. The PAC discussed in detail the current status and prospects of the MASHA spectrometer, and strongly supported the intention of the FLNR Directorate to start experiments with this mass spectrometer in 2010.

Status of the GABRIELA Set-Up. The PAC noted that the ongoing programme, started in 2008, to upgrade the VASSILISSA separator, together with the GABRIELA system for detection of nuclear reaction products, would be of benefit for the study of asymmetric reactions, and strongly supported the further upgrade of the GABRIELA–VASSILISSA complex with high priority.

Scientific Report. The PAC heard with interest a status report on the theory of muon catalyzed $pt\mu$ fusion and recommended the development of an experimental project to study $pt\mu$ fusion by the Mu-CATALYSIS collaboration: JINR (Dubna) – VNIIEF (Sarov) – Delft University – INP (Cracow) – ITEP (Moscow).

The 32nd meeting of the Programme Advisory Committee for Nuclear Physics was held on 17–19 June. It was chaired by Professor W. Greiner.

The members of the PAC for Nuclear Physics commemorated the Director of JINR, Alexei Sissakian, who made outstanding contributions to the development of JINR and of its cooperation with research centres of the Member States and other partners. The PAC deeply regretted the sad loss of Academician A. Sissakian. He will be sorely missed by the scientific community at Dubna and worldwide.

The Chairperson of the PAC, W. Greiner, presented the implementation of the recommendations taken at the previous meeting. JINR Acting Director M. Itkis informed the PAC about the Resolution of the 107th session of the Scientific Council (February 2010) and about the decisions of the Committee of Plenipotentiaries (March, May 2010).

Concerning the report «Applied Research and Innovative Activities at JINR» presented at the meeting, the PAC emphasized the considerable importance and impact of this aspect of JINR work and highly appreciated JINR's experience and potential in a wide range of applied fields.

The PAC appreciated the results obtained within the framework of the theme «Nuclear Physics with Neutrons — Fundamental and Applied Investigations». It recommended completion of this theme by the end of 2010 and supported continuation of the research programme in neutron nuclear physics under a new theme «Investigations in the Field of Nuclear Physics with Neutrons» during 2011–2013 with first priority.

Based on the information presented on the SPRING project, the PAC recommended continuation of the investigations of reactions with proton pair formation, including experiments with polarization.

The PAC noted the new results obtained in the MUON project during the last three years, particularly in investigations of ferrofluids with magnetic nanoparticles with the μ^+SR method and in the study of magnetic properties in semiconductors (Si, Ge) and in diamonds using the μ^-SR method. According to this PAC, the new project MUON is an almost pure solid-state physics programme that should be addressed by the PAC for Condensed Matter Physics. For the meantime, given

the high international reputation of the MUON collaboration, continuation of this project and its financing was recommended.

The PAC discussed the projects of two new facilities proposed within the framework of the DRIBs-III programme. Scientific plans and technical details of the next generations of both in-flight fragment-separator ACCULINNA-2 and gas-filled separator for heavy nuclei were examined. The PAC stated that further progress in experimental studies of reactions with radioactive beams and properties of superheavy elements depended on the chosen parameters of both separators at the Flerov Laboratory of Nuclear Reactions that should meet modern requirements in accordance with the JINR seven-year plan.

The ACCULINNA collaboration was quite successful and productive for the last 15 years. In particular, the physicists obtained high-quality results on the proton-rich ^{6}Be and ^{26}S nuclei. Due to the financial restrictions of FLNR, the PAC would appreciate a scientific programme more focused on a couple of experiments to be unique around the world and possible in the low-energy domain. It also recommended starting a more detailed technical design of the separator by reconsidering its initial broad scientific programme at the next meeting.

The new multipurpose gas-filled on-line electromagnetic recoil separator is designed for investigation of heavy-ion induced reactions. The PAC appreciated the high efficiency of the separator (for both symmetric and asymmetric entrance channels), its simplicity, and the relatively low costs of the chosen design, and recommended continuation of discussions on the final project at the next meeting.

The PAC heard with interest a scientific report on the description of the symmetric and asymmetric fission valleys in ^{226}Th. This theoretical study is closely connected with the experimental research of the mass distribution of fission fragments performed at FLNR.

The 33rd meeting of Programme Advisory Committee for Particle Physics was held on 21–22 June. It was chaired by Professor E. Tomasi-Gustafsson.

The members of the PAC for Particle Physics commemorated Alexei Sissakian, who made an outstanding contribution to the development of JINR as a large international centre for fundamental research, education of young scientists and innovative activities, and played a leading role in the formulation of the JINR current and future research programmes based on the road map for JINR strategic development. In particular, he initiated and headed the largest project of JINR for the construction of the NICA heavy-ion collider. A. Sissakian also greatly contributed to the promotion of the international cooperation of JINR and of its attractiveness for the Member States and other partners. Since the establishment of the PAC for Particle Physics in 1994 up to 2006, as Vice-Director of JINR A. Sissakian coordinated the activity of this PAC and afterwards as Director he continued to take a keen interest in its work. The PAC deeply regrets the sad loss of Academician A. Sissakian.

The PAC was informed by JINR Vice-Director R. Lednický about the Resolution of the 107th session of the JINR Scientific Council (February 2010) and about the decisions of the JINR Committee of Plenipotentiaries (March, May 2010).

The PAC was pleased to note that the Committee of Plenipotentiaries (CP) appreciated the significant progress in upgrading the Nuclotron-M/NICA accelerator complex. In particular, the CP stated that during the 40th and 41st runs of the Nuclotron-M (2009–2010) the physics research programme was fulfilled completely and stable operation of the accelerator complex at high intensity was demonstrated. For the first time at the Nuclotron, the acceleration of ions with $q/A \sim 1/3$ was accomplished, and xenon ions ($A = 124$) were accelerated up to the energy 1.5 GeV/nucleon. Stable work of the magnetic system at 1.8 T was shown. Also for the first time a new operation mode for the ring was successfully tried and tested to allow long runs with routine breaks to be carried out without helium losses and without increasing liquid nitrogen consumption.

The PAC welcomed the recent signature of the protocols and agreements with CERN, the Budker INP, and GSI concerning collaboration on the NICA project.

The PAC concurred with the Nuclotron-M/NICA MAC about essential advancement in the Technical Design Report for the NICA and noted the importance of further work to start infrastructure upgrade in 2011. At its future meeting, it looks forward to being presented a proposal for the next step of realization of the Nuclotron-M/NICA project. The PAC encouraged the JINR management to publish an international call for experiments at the Nuclotron-M as soon as reliable performance figures can be presented qualifying for an outstanding physics programme. The PAC thanked the VBLHEP Directorate for the organization of the visit to the Nuclotron-M and appreciated the detailed explanations given by G. Trubnikov.

Concerning the report on the ongoing preparation of the white paper for the NICA programme on the mixed phase and spin physics, the PAC noted the progress achieved in this field and recommended continuation of the work to elaborate a competitive research programme in view of its complementarity with studies planned at CERN, RHIC, and FAIR.

The PAC highly appreciated the new efforts of the Directorate towards further development of the JINR partnership programmes, noting, in particular, the bilateral agreements signed by JINR in January–March 2010 with CERN, the Budker INP, BNL, FNAL, and MEPI.

The PAC took note of the report on the progress for ongoing developments at JINR related to the ILC and recommended further participation in this work.

The PAC took note of the reports by JINR groups on the first scientific results in the ALICE, ATLAS, and CMS experiments and highly appreciated the obtained results. It looks forward at its future meetings to regular presentations of JINR's participation in data analysis focusing on JINR physicists' contributions and activities.

Noting the decision of the Committee of Plenipotentiaries concerning JINR's participation in data taking in the LHC experiments (ATLAS, ALICE, and CMS), the PAC joined the CP in recognizing the successful fulfillment of the obligations in the construction and the commissioning of these detectors, as well as the active involvement of JINR staff members in the first data analysis.

The PAC considered the proposal of the project «MultiPurpose Detector to Study Properties of Hot and Dense Baryonic Matter at the NICA Collider (MPD)» and recommended its approval until the end of 2015. It noted the importance of the proposed scientific programme, the progress in the organization of the international collaboration, and the great interest from a wide scientific community. The PAC was pleased to see the first version of a comprehensive CDR.

The PAC considered the proposal for JINR's participation in the CBM project and recommended its approval until the end of 2015. It encouraged the JINR group to select and focus on specific R&D applications to be developed in close connection with MPD.

The PAC considered the proposal of the TRANSMUTATION project and recommended its approval until the end of 2013, noting the practical importance of the proposed studies.

The PAC reviewed the reports on the themes «Mathematical Support of Experimental and Theoretical Studies Conducted by JINR» and «Information, Computer and Network Support of JINR's Activity», noted the high level, the necessity, and the good prospects of the ongoing research and recommended continuation of these activities until the end of 2013. The PAC also recommended that LIT, with the support of the JINR management, prepare a proposal for a High Performance Computing Centre at JINR which would provide the JINR scientists with adequate computational capacity in the future.

The PAC took note of the report on JINR's participation in the BES-III project, highly appreciated the obtained results and the importance of this work, and recommended continuation of this activity until the end of 2013.

The PAC appreciated the poster presentations in particle physics prepared by young scientists from VBLHEP and BLTP and recommended that this form of presentations be included in the agenda of its future meetings. It encouraged the publication of the reports delivered at this session as poster presentations in the journal «Physics of Elementary Particles and Atomic Nuclei, Letters».

The PAC noted with interest the scientific reports: «Observation of a First Tau Neutrino Candidate Event in the OPERA Experiment in the CNGS Beam» (by Yu. Gornushkin), «Spin Structure of the Nucleon» (by G. Mallot), and «NA61/SHINE at the CERN SPS» (by M. Gadzicki).

The 32nd meeting of the Programme Advisory Committee for Condensed Matter Physics was held on 24–25 June. It was chaired by Professor V. Kantser.

The members of the PAC for Condensed Matter Physics commemorated Alexei Sissakian, who made an outstanding contribution to the development of JINR as an international centre of excellence for fundamental physics research. The PAC also commemorated František Spurný, a member of this PAC during 2005–2010, who significantly contributed to the strengthening of collaboration between JINR and Czech research centres. The PAC deeply regretted the sad loss of Academician A. Sissakian and Professor F. Spurný.

The Chairperson of the PAC presented a brief overview of the PAC report delivered at the session of the JINR Scientific Council in February 2010 and information about the implementation of the recommendations of the previous PAC meeting.

JINR Chief Scientific Secretary N. Russakovich informed the PAC about the Resolution of the 107th session of the JINR Scientific Council (February 2010) and about the decisions of the JINR Committee of Plenipotentiaries (March, May 2010). The PAC was pleased to note that most of the recommendations of the previous PAC meeting concerning JINR research in the areas of condensed matter physics had been accepted by the JINR Scientific Council and Directorate.

Concerning the report on the closing theme «Information, Computer and Network Support of JINR's Activity», the PAC recommended the extension of this theme in 2011–2013 with special emphasis on data protection in the Grid environment.

The PAC took note of the report about the latest work on modernization of the IBR-2 reactor and noted that it was nearing completion in accordance with schedule. It also supported the plan concerning the preparation of the reactor for the physical start-up and noted that timely and full financing of the planned activities has crucial importance for successful completion of the reactor modernization. The PAC recommended continuation of efforts for the installation, adjustment and alignment of the new reactor equipment, as well as for the project of cryogenic moderators.

The PAC heard an overview of research in the area of nanoscale physics and nanomaterials performed by FLNP in collaboration with research institutes of the JINR Member States by neutron scattering methods. Appreciating the wide range of activities, the importance of scientific results and effective collaboration in this research area, the PAC expressed hope that the restart of the IBR-2 reactor after modernization and real-

ization of the user policy at the spectrometer complex would promote further development and extension of the collaborative research in nanoscale physics, nanomaterials, and other condensed matter physics fields with universities and research centres in the Member States and other countries.

The PAC heard an overview of the current research at BLTP concerning the physics of nanosystems. It was impressed by recent results in the field of carbon nanostructures, atomic clusters, quantum dots, Josephson junctions, and recommended continuation of theoretical studies in the field of physical processes in nanostructures and new materials, including those related to experimental work at JINR basic facilities.

The PAC was informed about the status of the DN-6 diffractometer and appreciated the progress in the realization of this first-priority project, which is under way according to planned schedule. It recommended completion of the basic configuration of DN-6 by the end of 2011, regarding this work as a major task in the development of the IBR-2M spectrometer complex.

The PAC took note of the information about the current status of the NERA-PR spectrometer and supported all the activities planned for modernization of the NERA-PR spectrometer. The PAC considered the financial support within the framework of grants of Poland's Plenipotentiary to be very important for the full replacement of the NERA-PR neutron mirror guide in 2010–2011. Since the replacement of the NERA-PR neutron mirror guide after September 2010 will require stopping of the experiments, the PAC recommended high priority for this project.

The PAC heard with much interest the scientific reports on various fields of condensed matter physics: «The Stopping and Range of Slow Heavy Ions in Light Targets» (by V. Kuzmin), «Studies of Properties and Modification of Multilayered Nanostructures by Swift Heavy Ions» (by A. Didyk), «Computer Analysis of Dynamics of Low-Dimensional Nanostructures in External Fields» (by A. Gusev), «Resonant Mechanisms of Optical Generation of Terahertz Radiation and Their Relation to Biological Systems» (by A. Bugay), «Small-Angle Scattering from Deterministic Fractal Systems» (by E. Anitas), and «Internal Dynamics Studies in Selected Steroid Hormones» (by D. Nowak). The PAC noted the wide spectrum of the scientific lines of investigation presented and high quality of research at JINR. At its future meetings the Committee wishes to hear new reports to be delivered by JINR scientists with emphasis on the obtained results rather than on detailed methodological aspects.

The PAC heard with interest the information about the workshop «Application of Charged Particle Accelerators in Studying Radiation Damage in Systems with a High Level of Organization (Space, Medical, Biological, and Technical Aspects)» (29–30 March 2010, Dubna). The PAC emphasized the importance of taking advantage of JINR's potential for the research focusing on different aspects of the biological effect of high-energy heavy charged particles, the use of nuclear physics methods in investigations of planets and physical calibration of space instruments, and radiation-caused failures of spacecraft electronics. It also recommended that VBLHEP present at its next meeting information concerning a special beam channel at the Nuclotron-M for medical and radiobiological experiments. The PAC supported the JINR Directorate's initiative to establish an International Joint Scientific Council of the Russian Academy of Sciences on the issues of general and space radiobiology, which would focus on realizing major research projects in this area by using charged particle accelerators.

The PAC was pleased with the poster presentations by LRB young scientists in the various fields of radiobiology. The poster «A Stochastic Approach to the Mathematical Modeling of the SOS System in *Escherichia coli* Bacterial Cells under Ultraviolet Irradiation», presented by M. Lyashko, was selected as the best poster at the session. The PAC also noted two other high-quality posters: «Established Calibration Curves for Radiation of Different LET for Potential Retrospective Dose Estimation», presented by M. Deperas-Kamińska, and «Effects of *rad53* Mutation on Deletion Induction in Haploid Yeast *Saccharomyces cerevisiae* after UV- and γ-Irradiation», presented by A. Kokoreva. The PAC asked the JINR Directorate to award the authors of these papers at its next meeting.