

COLLABORATION IN SCIENCE AND TECHNOLOGY

The basic results of the international cooperation in science and technology of the Joint Institute for Nuclear Research in 2006 reflect the following data:

- joint research has been conducted with scientific centres in Member States, as well as international and national organizations in other countries, on 52 topics of first priority and 4 topics of second priority;
- to solve cooperation issues and questions of participation in scientific meetings and conferences, the Joint Institute sent 2882 specialists;
- for joint work and consultations, as well as for participation in meetings, conferences and schools held at JINR, 1683 specialists were received;
- 29 international scientific conferences, 13 workshops and 11 meetings were organized and held;
- 20 scholarship holders worked at the Institute laboratories.

The international cooperation of JINR is presented in agreements and treaties. Its development comprises joint experiments at basic facilities of physics centres, the acquisition of research data, preparation of joint publications of the joint research results, the supply of equipment and techniques for the interested sides, etc.

On 24 January a ceremonial meeting dedicated to the 50th anniversary of JINR was held in Prague, in the building of the Charles University, one of the oldest universities of Europe. Among honorary guests present at the meeting were JINR Director Professor A. Sissakian, JINR Director Assistants V. Katrsev and G. Arzumanyan. Prime Minister of the Czech Republic J. Paroubek, Plenipotentiary of the Russian Federation in Czechia A. Fedotov, as well as representatives of Czech scientific, governmental and social organizations, attended the meeting.

Opening the meeting, Rector of the University Professor I. Wilhelm spoke on the long-standing history of JINR–Czechia cooperation (until 1993, JINR–Czechoslovakia). Prime Minister of Czechia J. Paroubek congratulated the audience on the 50th an-

niversary of JINR and marked the great role of the Dubna international physics centre in foundation and development of nuclear physics in all the JINR Member States, including Czechoslovakia and Czechia. Plenipotentiary of the Government of the Republic of Czechia to JINR Professor R. Mach made a report at the meeting. JINR Director Professor A. Sissakian presented a review «JINR: Yesterday, Today, Tomorrow».

Addressing the audience with concluding words, Professor I. Wilhelm handed the Gold Medal of the Charles University to A. Sissakian in appreciation of fruitful and successful cooperation of Czech physics and educational centres with JINR, to mark the 50th anniversary of JINR.

On 20–25 January, Director of the Nuclear Physics Centre in Saclay (France) J. Feltesse, accompanied by his spouse, visited Dubna. He met with JINR Director Professor A. Sissakian, delivered a seminar at the Bogoliubov Laboratory of Theoretical Physics, and visited the Veksler and Baldin Laboratory of High Energies and the Laboratory of Particle Physics, where he met with his colleagues participating in the NA48 experiment at CERN. The French scientist highly estimated the prospects of cooperation among physicists from Saclay and Dubna.

On 6 February, representatives of the German Research Foundation (DFG) Dr K. Sach, Dr Sch. Krükeberg and head of the DFG Moscow Office Dr Ch. Schaich were on a visit to JINR. A welcome reception was arranged for the DFG delegation at the JINR Directorate. The guests also visited the Laboratories of Neutron Physics, Theoretical Physics and High Energies. The acquaintance with their activities, according to Dr Ch. Schaich, left an indelible impression.

DFG representatives made a report on the research facilitation programme for Russia and CIS countries at the conference hall of the Bogoliubov Laboratory of Theoretical Physics. Among the audience were both scientists of the older generation and young scientists,

including researchers from JINR Member States delegated to participate in the traditional school for theorists organized in the framework of the DIAS-TH programme developed at the Institute.

On 6 February a delegation from the High Energy Accelerator Research Organization (KEK, Japan), headed by the General Secretary of the KEK Inter-University Research Institute Corporation, D. Takeuchi, visited JINR. The Japanese scientists became acquainted with research activities at the Flerov Laboratory of Nuclear Reactions and the Veksler and Baldin Laboratory of High Energies, were received at the JINR Directorate and visited the Institute's Museum of History of Science and Technology.

During the reception at the JINR Directorate, a Memorandum on cooperation was signed by JINR leaders as part of a new project to study hypernuclei properties, which is of the highest priority at the J-PARC accelerator complex, a facility under construction at KEK. There are three main topics within this project. These are experiments associated with the production and use of spallation neutrons, the T2K neutron experiment and studies of hypernuclei properties using secondary beams.

The Japanese scientists noted a wide variety of scientific trends developed at JINR, a good base for research and a well-tuned combination of studies in both fundamental and applied fields of science.

On 9–10 February, plenary sessions of the International Committee for Future Accelerators (ICFA) were held at CERN. Directors of the largest particle physics centres were invited to participate in the sessions. Under the chairmanship of DESY Director A. Wagner, the Committee members considered issues related to the International Linear Collider (ILC) project, as well as results of work of the CERN Council Strategy Group and international cooperation of scientists on high-energy physics.

Participating in the meeting was JINR Director A. Sissakian, who told about the JINR scientific programme. During his stay at CERN, he also met with CERN Deputy Director-General for Science J. Engelen, Advisor to the CERN Directorate N. Koulberg, Counsellor of the RF permanent mission to the European Office of the United Nations A. Petrov, and others. V. Karzhavin, leader of a JINR group at CERN, accompanied the JINR Director during these meetings.

On 13–15 February a delegation from JINR visited Pretoria, the Republic of South Africa (RSA). It included A. Sissakian, M. Itkis, N. Russakovich, D. Kamanin. They took part in the first meeting of the Coordinating Board on JINR–RSA cooperation. As a result of the meeting, General Director of the RSA Department of Science and Technology Doctor R. Adam and JINR Director Professor A. Sissakian signed a Protocol. According to it, programmes of joint research

were defined and the RSA contribution to the JINR budget of 2006 in the amount of US\$1 million 250 thousand was settled. Thus, the associate membership of RSA at JINR was consolidated.

On 20 February, a delegation from the Federal Service for Ecological, Technological and Atomic Supervision, headed by its Director K. Pulikovskiy visited JINR. Members of the delegation were head of Rostekhnadzor's central interregional territorial district V. Snigirev, deputy head of the department for acquisition and analysis of data on safety of nuclear research facilities, nuclear energy setups and radiation hazard objects A. Sapozhnikov, and others.

The Rostekhnadzor representatives were received by JINR Directorate members A. Sissakian, M. Itkis, G. Shirkov, A. Belushkin, A. Vinogradov, and V. Kartashov. In the course of the discussions, issues of improving the cooperation between JINR and Rostekhnadzor were touched upon. The guests were told about the successful implementation of the project on modernizing the IBR-2 reactor and results of work on the synthesis of superheavy elements — the lines of research developed in close cooperation with Rostekhnadzor, as well as about creation of an innovation belt around JINR and plans for development of nuclear physics technologies in the free economic zone.

In his talk with the Institute's Directorate members, K. Pulikovskiy stressed that his primary interest was the extensive experience of JINR as one of the first nuclear physics centres, equipped with a state-of-the-art system for accounting and control of radioactive materials. The guests got acquainted with the physical protection and security systems of JINR and visited the IBR-2 reactor at the Frank Laboratory of Neutron Physics, the Flerov Laboratory of Nuclear Reactions and the Department of Radioactive and Fissile Materials.

On 20–21 February the 16th meeting of the Coordinating Board on the cooperation of the Federal Ministry of Education and Scientific Research of Germany (BMBF) and JINR was held in the International Conference Hall under the chairmanship of A. Sissakian. A delegation from Germany arrived in Dubna to take part in it.

The meeting of the Board was opened with the report by JINR Director Professor A. Sissakian on JINR's activities in 2005, on the programme of scientific research at JINR in 2006 and the recommendations of the 99th session of the JINR Scientific Council. JINR Assistant Director V. Katrsev reported about the JINR budget compliance in 2005, the JINR draft budget for 2006, JINR Finance Committee activities and disposition of the BMBF contribution in 2005. The Directors of JINR Laboratories briefly informed the meeting about the joint projects. Their reports reflected the diversity and amounts of the joint research of JINR and German scientific centres. The members of the German delegation noted the fact that along with financing the

joint studies from the Ministry there are many direct contacts between German research centres and Dubna. A Protocol was signed in conclusion which stated that BMBF appropriated about 1 million euros to JINR in 2006. The guests from Germany visited JINR Laboratories with an excursion.

On 28 February a ceremonial meeting of the Coordinating Board on the cooperation of scientific centres of the Republic of Belarus and JINR, dedicated to the jubilee of JINR, was held in the Belarussian State University. Among the participants were representatives of the President administration, the Government, the National Academy of Sciences, the Foundation for Basic Research, scientific, educational and industrial organizations of Belarus which cooperate with JINR. Opening the meeting, Plenipotentiary of the Government of the Republic of Belarus to JINR, First Deputy Chairman of the State Committee on Science and Technology of Belarus (SCST) V. Nedilko read out the greetings of the Government on the jubilee of JINR signed by First Deputy of the Republic Prime-Minister V. Semashko.

Greetings and congratulations were also pronounced by BSU Rector Professor V. Strazhev and Chief Scientific Secretary of NAS of Belarus Academician N. Kazak. JINR Director Professor A. Sissakian made a report «JINR: Yesterday, Today, Tomorrow» where he spoke in detail about the large contribution of Belarussian scientists to the JINR programme and its scientific and technical cooperation.

Corresponding Members of RB NAS P. Tomilchik, A. Bogush, Yu. Pleskachevsky, Professors N. Shumeiko, I. Solovotsov, N. Maksimenko, V. Kuvshinov, S. Rakhmanov, V. Baryshevsky and others presented a wide review of cooperation of scientists in scientific, educational and innovation programmes. Professor I. Golutvin gave a lecture on the achievements in high-energy physics to the BSU students. The jubilee events had broad mass media coverage.

On 1 March A. Sissakian met with Chairman of the Presidium of the Belarussian National Academy of Sciences, Member of the Council of Ministers of Belarus M. Myasnikovich, SCST leaders, Ambassador of Belarus in RF V. Grigoriev, and visited a number of scientific centres of RB NAS and BSU.

At the beginning of March a delegation of Japanese scientists visited JINR. It included Professors N. Tomofumi and T. Takahashi (KEK), H. Tamura (Tohoku University), M. Sato (ISTC). They acquainted themselves with the activities of JINR and discussed prospects for cooperation on the «Hypernuclei» project with the JINR Directorate and JINR leading scientists.

Another group of Japanese scientists arrived in Dubna immediately after the above visit, on the invitation of the DLNP Directorate and SCAR, to start work on the agreements reached between KEK and JINR. The guests visited the JINR Experimental Workshop, met with the Institute Director, Professor A. Sissakian,

took part in a seminar at DLNP and got acquainted with activities at SCAR. As a result of the visit of the Japanese scientists, a Memorandum of Intentions was signed on JINR–KEK cooperation in research of multiparticle hadron systems with the -2 , -1 strangeness. The document was signed by JINR Director Professor A. Sissakian and Director of the Institute of Particle and Nuclear Studies M. Kobayashi.

On 3 March, JINR Director A. Sissakian had a meeting with Extraordinary and Plenipotentiary Ambassador of the Republic of Cuba to Russia Jorje Marti Martinez. The meeting was organized on the initiative of the Cuban Embassy. Issues of renewal and activation of cooperation between JINR and Cuban scientific centres were discussed.

On 14 March, a press conference for Russian and foreign journalists dedicated to the 50th anniversary of the Joint Institute for Nuclear Research was held at the International Conference Hall. JINR Director A. Sissakian, Research Supervisor V. Kadyshevsky, Vice-Directors M. Itkis and R. Lednický spoke about the history, development and present days of the Institute, as well as about long-term plans for research. They also answered the questions from the media. The attendees of the press conference were shown around the Flerov Laboratory of Nuclear Reactions.

On 18 March, JINR was visited by the Georgian Extraordinary and Plenipotentiary Ambassador to the Russian Federation I. Chubinishvili, who was accompanied by Envoy Extraordinary and Plenipotentiary G. Shugarov and Senior Advisor G. Karalashvili. The delegation was received by JINR Director A. Sissakian. Participating in a brief discussion were JINR Vice-Director R. Lednický, Chief Scientific Secretary N. Russakovich, head of a DLNP department D. Khubua, and other JINR representatives. The Ambassador passed his cordial congratulations on the 50th anniversary of JINR to its staff, took note of JINR's significant role for Georgia, expressed support for further participation of Georgia in JINR and strengthening cooperation between scientists. After a visit to the Laboratories of Neutron Physics and Nuclear Reactions I. Chubinishvili met with the Georgian national group of the JINR staff.

On 21 March, JINR Director Professor A. Sissakian had a meeting in Moscow with MSU Rector Academician V. Sadovnichy. Participating in the meeting was also Pro-rector V. Belokurov. Issues of cooperation in education, science and innovation programmes were discussed. An arrangement was made to conclude a general agreement on collaboration between JINR and Moscow State University. MSU Rector expressed his heartfelt congratulations on the 50th anniversary of the Institute's foundation.

On 28 March, an exhibition entitled «50th Anniversary of JINR: Stages of Development and Major Scientific Achievements» was opened at the JINR Museum of History of Science and Technology. JINR Director Professor A. Sissakian, Vice-Director R. Lednický, Directors of laboratories V. Kekelidze and A. Malakhov, BLTP Deputy Director A. Sorin, Secretary for Scientific Information B. Starchenko, LIT Scientific Secretary T. Strizh, Head of the JINR Publishing Department T. Zhabitskaya, and others spoke at the opening ceremony.

The exhibition is based on Yu. Tumanov's photo works and reflects the key stages of the development of the Institute and its eight laboratories. The organization structure of JINR, its scientific ties with the Member States and largest scientific centres worldwide, as well as the most significant scientific achievements of the JINR laboratories, are shown along with the promising applied results. Apart from that, special exhibition stands were devoted to the activity of the University Centre, the Association of Young Scientists and Specialists, the JINR Science and Technology Library, and the Publishing Department of JINR. Part of the exposition was dedicated to the founders of scientific schools and key avenues of research — prominent scientists after whom many streets of Dubna and avenues on the site of the Institute are named.

On 29 March, JINR was visited by President of the Academy of Sciences of Bangladesh Professor Sh. Ali. Honorary Professor of Physics of Dacca University and a number of international scientific societies Sh. Ali met with JINR Director Professor A. Sissakian, Vice-Director M. Itkis, Chief Scientific Secretary N. Russakovich and was shown around the Laboratories of Nuclear Reactions and High Energies.

On 5 April a working meeting of JINR Director A. Sissakian and CERN Director-General R. Aymar was held at CERN, which was also attended by CERN Deputy Director-General J. Engelen and JINR group leader at CERN V. Karzhavin. Issues of the development of cooperation between CERN and JINR were discussed. An agreement was reached on dates to organize the exhibition «Science Bringing Nations Together» dedicated to JINR's 50th anniversary and 50 years of CERN–JINR cooperation at the Headquarters of the UN European Office in Geneva.

On 19 April JINR Director A. Sissakian visited the Embassy of India in the Russian Federation, where he was received by Ambassador Extraordinary and Plenipotentiary of India to Russia Mr K. Sibal. In the discussion, they touched upon issues of widening cooperation between JINR and scientific centres and universities of India, and considered the topic of possibly accepting India as an associate member of JINR.

The Ambassador congratulated the community of JINR on the 50th anniversary of the Institute's founda-

tion. A. Sissakian invited Mr K. Sibal to visit JINR, and the invitation was accepted with gratitude. The Embassy Adviser, Mr P. Shukla, and JINR Deputy Chief Scientific Secretary D. Kamanin took part in the meeting.

On 24–26 April meetings of the LHC Resource Review Boards were held at CERN. JINR was represented by its Director Professor A. Sissakian and JINR experts Professor I. Golutvin, A. Vodopianov, and M. Kazarinov.

CERN Director-General R. Aymar and LHC project leader L. Evans made reports at the plenary session on the project status and progress in the accelerator development. Five meetings presided by CERN Deputy Director-General J. Engelen considered the results of work and plans for 2006–2007 in the development of facilities and design of experiments in the programmes ATLAS, ALICE, CMS, LHC-b, and in computing at the LHC.

On 3–6 May, JINR Director Professor A. Sissakian and JINR Directorate Adviser RAS Corresponding Member I. Meshkov stayed in Sarov with a working visit. They had negotiations with General Director of the All-Russian Scientific Research Institute of Experimental Physics (ARSRIEP) Academician R. Ilkaev, the Institute's Deputy Scientific Leader Academician Yu. Trutnev, Deputy Director of the RAS Institute of Applied Physics (Nizhni Novgorod) RAS Corresponding Member A. Sergeev, Director of the ARSRIEP Institute of Nuclear and Radiation Physics Professor V. Punin, First Deputy General Director of ARSRIEP Professor V. Neznamov, and other scientists. The key discussion topic at the negotiations was the extension of the cooperation programme in a number of international projects, including those of ILC and a medical radiation centre.

On 11–12 May an official delegation from JINR, including Deputy Chief Engineer A. Vinogradov, Deputy Chief Scientific Secretary D. Kamanin, and FLNP Deputy Director V. Shvetsov, took part in the ceremonial meeting of the scientific-technical council of the Scientific Research Institute of Atomic Reactors (SSC RF SRIAR) dedicated to the 50th anniversary of the foundation of this centre. The long-standing fruitful history of the joint JINR–SRIAR work was marked in congratulation reports.

The JINR delegation visited Dimitrovgrad and had working meetings with managers and leading specialists of SRIAR; they discussed very important issues, like the disposal of irradiated fuel from the IBR-30 and IBR-2 reactors and opportunities to interchange the experience from the standpoint of the coming extension of the operating resources of the JINR reactor equipment. The participants of the discussions came to the conclusion that the JINR–SRIAR cooperation would be no less fruitful in future.

On 18–19 May an official delegation from JINR headed by JINR Director A. Sissakian was in Sofia and took part in the celebration events on the jubilee of the Joint Institute. The delegation included V. Kadyshesky, I. Golutvin, D. Kamanin, Yu. Tumanov.

A working meeting was held on 18 May at the National Agency on Nuclear Regulation under the chairmanship of the Agency's Deputy Director L. Kostov. The guests from JINR discussed a wide range of topics with their Bulgarian colleagues. During the discussion A. Sissakian talked on the present status of JINR, the main trends of its development, and prospective projects, SAD in particular, marking the urgency to attract young people and ensuring of sound financing. In this aspect, he mentioned opportunities to construct an international linear collider in Dubna and gave an outline of the special economic zone in Dubna and prospects for technical cooperation with industrial companies of Bulgaria in this field.

L. Kostov declared that the Government of Bulgaria is full of willingness to back up the JINR strategy to increase financing. In particular, he expressed the interest of Bulgaria in the SAD project. He also stressed the considerable role of JINR in promoting closer contacts of Bulgaria with CERN. Director of the Institute of Nuclear Research and Nuclear Energy of BAS J. Stamenov suggested a number of measures to attract young Bulgarian specialists to Dubna and to nuclear physics as a whole.

A ceremonial meeting dedicated to the golden jubilee of JINR was held on 19 May in the conference hall of the Bulgarian Academy of Sciences. A. Sissakian opened the meeting with his report «JINR: Yesterday, Today, Tomorrow». Vice-President of the Bulgarian Academy of Sciences N. Subotinov presented the Academy plaques to A. Sissakian, V. Kadyshesky, and Ts. Vylov to mark the jubilee of the Joint Institute for Nuclear Research.

On 21 May JINR Director Professor A. Sissakian had a meeting at JINR with the Ambassador Extraordinary and Plenipotentiary of Slovakia to RF, A. Eisár. JINR Vice-Director M. Itkis and head of the Slovak community of JINR FLNR J. Kliman also took part in the meeting. Issues of JINR cooperation with scientific and educational centres in Slovakia were discussed.

On 26 May a working meeting of JINR CP Chairman, RF Minister of Education and Science A. Fursenko and JINR Director RAS Corresponding Member A. Sissakian was held in Moscow. The main issue of the discussion was the implementation of the resolutions of the Committee of Plenipotentiaries of the JINR Member States adopted at the CP session in March 2006 by the Member States and the Institute's Directorate. JINR Assistant Director on Economic and Financial Issues V. Katrasev took part in the meeting.

On 13 June a delegation of the Ministry of Industry and Trade of the Czech Republic visited Dubna. It was headed by Deputy Minister Adviser V. Hejdoš. The delegation also included First Secretary of the Czech Embassy in Russia J. Fingerland. The members of the delegation had a meeting with the leader of the Russian SEZ territorial administration in the Moscow Region, A. Rats, and then visited the Joint Institute for Nuclear Research.

At the JINR Directorate, the Czech delegation was received by JINR Vice-Director R. Lednický, JINR Assistant Director A. Ruzaev, and leader of the Czech staff members at JINR A. Kovalik. The participants of the meeting discussed issues of broadening and deepening scientific and technical cooperation of JINR with scientific centres and enterprises of Czechia.

V. Hejdoš marked that their visit to Dubna was organized in the framework of the activities of the Intergovernmental Russian–Czech Joint Committee established in accordance with the agreement between the Governments of the two countries to develop economic, industrial, and scientific-technical ties. The leader of the Czech delegation laid the emphasis on the fact that he saw many interesting points in the Dubna SEZ model for the prospects of the cooperation. The delegation visited the Flerov Laboratory of Nuclear Reactions and the Dubna Chamber of Commerce and Industry.

In June Plenipotentiary of the Government of Poland to JINR Academician A. Hrynkiewicz visited the Joint Institute for Nuclear Research. Issues of technical operation at JINR were discussed on 15 June at the meeting with JINR Director A. Sissakian and JINR Vice-Director M. Itkis. A. Hrynkiewicz presented the jubilee medals «50 Years of the Participation of Poland at JINR» to a group of the Institute's staff members.

On 19 June JINR Director A. Sissakian presented diplomas and flowers to Dubna school teachers who become winners of the annual Dubna competition for JINR grants.

The ceremony is traditionally held on 26 March, the day of JINR foundation, but this year the agenda of the jubilee day was so heavy that the awarding ceremony was decided to be put off. Addressing the teachers, A. Sissakian marked that it was not at all easy to sum up the results of the competition, but its winners indeed became representatives of the outstanding cohort of the Dubna school education.

On 22 June a joint meeting of the scientific expertise councils of the AFK Sistema (headed by Academician S. Emelianov) and the OAO Dubna–Sistema (headed by Professor A. Olchevski) was held in Moscow. A decision was taken at the meeting to support the strategy of establishing «the core» of the right-bank special economic zone site of the technological-and-innovative type. The concept was jointly worked out by JINR and Dubna–Sistema under the direction

of JINR Director A. Sissakian. N. Mikhailov, member of the corporation directors' council, A. Ruzaev, JINR assistant director, and other specialists took part in the discussion of the issue. The council recommended that the AFK Sistema management participate in the strategy implementation. In this way, JINR Directorate continues active work to ground the terms for the development of a special economic zone in Dubna.

On 23 June a regular meeting of the Council of Dubna enterprises' and organizations' directors was held at the Joint Institute for Nuclear Research, where A. Sissakian announced a list of specific activities to develop a special economic zone in the right-bank part of Dubna. V. Prokh, V. Trusov, I. Fedorov, O. Uspensky, I. Barsukov, V. Bobrov, A. Sissakian, M. Itkis, G. Shirkov, A. Ruzaev, V. Katrasev took part in the meeting.

According to the strategy proposed by the Institute's Directorate, nuclear physics-oriented technology, which is closely connected with JINR and its Member States, should be given the priority in the establishment of the special economic zone in Dubna. At the same time, the allocation of the SEZ resident companies is planned to be in the right-bank part of the zone. An architectural and building plan for that part is given in the concept; it is meant not only to develop office and industrial modules of high international standard, but to popularize science and attract young people to it.

The concept contains a clear strategy of implementation of pilot innovation projects connected with the development of a medical radiation centre, an ion-plasma technology centre and other projects which are most soundly worked out in scientific and technical parameters and are ready to be commercialized. In addition, the concept makes provision for joint activities of JINR, AFK Sistema and the territorial administration of the Moscow Region of the management of special economic zones in establishing a financial innovation infrastructure, and a system of venture funds in particular. On the whole, the JINR/Dubna-Sistema strategy was admitted well-grounded and prospective. The participants discussed specific actions to implement it.

On 26 June a group of specialists from NASA (USA) and the State Scientific Centre — the Institute of Medicobiological Problems of RAS (IMBP, Moscow) visited JINR. One of the aims of the visit was to scrutinize possibilities to use the environment, technical equipment and elaborations of Dubna for the research in the combined effect of radiation and weightlessness.

During the visit, the American specialists were acquainted with the studies conducted at the JINR Laboratory of Radiation Biology and the Institute's accelerator basis resources; they also visited the Nuclotron. LRB Director Professor E. Krasavin talked about the forty-year history of radiobiological research at JINR and introduced the guests to the main trends of the current studies, marking that the Institute accelerator basis

provides wide opportunities to solve tasks in space radiobiology.

On 3–8 July the XII international conference «Symmetries in Physics» was held at the Yerevan State University. It was organized by the Joint Institute for Nuclear Research together with the Yerevan State University. The international committee of advisers to the conference was headed by JINR Director RAS Corresponding Member, Foreign Member of NAS of Armenia A. Sissakian. The first extended plenary meeting was devoted to the 50th anniversary of the establishment of JINR. President of NAS of Armenia Academician R. Martirosyan, YeSU Rector A. Simonyan and other scientists greeted the participants and marked the great role of JINR in the development of science in Armenia. Minister of Education and Science of the Republic of Armenia L. Mkrtychyan took part in the meeting.

JINR Director A. Sissakian made a detailed report on the scientific programme at JINR and issues of cooperation of the international centre in Dubna with scientific centres of Armenia. YeSU Rector presented the honorary gold medal of the University to A. Sissakian for his large contribution to science and the process of bringing nations together.

During his visit to Armenia, A. Sissakian met with President of NAS of Armenia R. Martirosyan and members of the Presidium of the National Academy of Sciences of Armenia, RA Minister of Economic Development and Trade K. Chshmaritian, Director of Yerevan Institute of Physics G. Asatryan, Plenipotentiary of the Government of the Republic of Armenia to JINR Academician G. Vartapetian, Mayor of Ashtarak G. Tamazyan, and other official persons. A discussion was held of a wide range of cooperation issues.

On 11 July a working meeting of CERN Director-General R. Aymar and JINR Director A. Sissakian was held in Geneva. It was also attended by CERN Deputy Director-General for Science J. Engelen, and JINR team leader at CERN V. Karzhavin. Both sides confirmed the successful implementation of all responsibilities by the JINR teams in participation of the Institute both in the work-out of LHC parts and in the preparation of experiments at the Large Hadron Collider (ATLAS, ALICE, CMS). A. Sissakian also had meetings with the leaders of those collaborations JINR teams are involved in.

According to CERN plans, the launching of the LHC will start in 2007. JINR worked out Memorandums of Understanding which will envisage the organization of JINR participation in obtaining physics results at the LHC.

On 19–22 July, JINR Chief Engineer RAS Corresponding Member G. Shirkov took part in the international meeting on linear colliders which was held in Vancouver (Canada), on the basis of the University of British Columbia (UBC). In the framework of the meet-

ing, attended by almost 300 scientists and specialists from largest research centres of the world, a session of the international committee for the Global Design Effort (GDE) was held on design and development of the International Linear Collider (ILC).

The USA, Japan, Germany, and CERN have already submitted their applications for erecting the collider in their territory. A group of JINR specialists in collaboration with the State Specialized Project Institute (SSPI) of the RF Ministry of Atomic Energy, Moscow, have prepared technical and economic basis documents to install the ILC in the region of Dubna. In his report at the session of GDE in Vancouver, G. Shirkov presented all the required calculations, technical, geological, and economic data. Thus, JINR has become the fifth candidate to have the project of the century installed in its territory.

On 25 July a delegation from the Republic of Korea visited JINR. It included chief executive of the Asian Pacific Center for Theoretical Physics (APCTP) S. Kim, Professor of Physics of the Kyungpook National University G. Kim, and Professor of Physics of the Pohang University of Science and Technology (POSTECH) V. Namkung.

A. Sissakian, R. Lednický, N. Russakovich, D. Kamanin, and V. Voronov met the delegation at the JINR Directorate. The meeting concluded in signing framework agreements of JINR with APCTP and POSTECH which provide a wide academic interchange and scientific cooperation. The guests expressed their interest in enlarging contacts with JINR and appreciated an opportunity for the Republic of Korea to become an Associate Member of JINR.

On 21–24 August in Harbin, a delegation from Dubna headed by JINR Chief Engineer G. Shirkov took part in the work of the 2006 Exhibition of Scientific and Technical Achievements and the International Forum on Scientific and Technical Cooperation of China and CIS.

G. Shirkov made a report about the special economic zone in Dubna and presented innovation projects of JINR. During his visit to Harbin, G. Shirkov met with Deputy Minister of Science and Technology of China D. Jingan and Director of the Department of Science and Technology of the Heilongjiang district Professor San Jao and discussed with them issues of the development of cooperation of Chinese scientific centres and high-technology enterprises with the Joint Institute for Nuclear Research. The traditions of this cooperation were established half a century ago, when China was one of the founder states of JINR, and they are actively progressing today.

On 11 September a ceremonial seminar was held at the Gran Sasso National Laboratory dedicated to the switching on a neutrino beam from CERN to Gran Sasso (the CNGS project). A delegation from JINR took part in the event. It was headed by JINR Direc-

tor A. Sissakian, who greeted Italian colleagues on behalf of the scientists of Dubna. He wished the project participants fruitful work and new results that would contribute considerably to the physics of elementary particles. The delegation from Dubna presented the Director of the Gran Sasso Laboratory with a portrait of Bruno Pontecorvo, the scientist who had anticipated a whole trend in the development of elementary particle physics — neutrino physics. He established traditions of neutrino research in Dubna, which are being developed at JINR today.

Especially for a series of experiments in Gran Sasso, staff members of JINR's Dzhelpev Laboratory of Nuclear Problems, together with their colleagues from the Institute of Scintillation Materials (Ukraine), designed and manufactured one of the subsystems of the OPERA facility, which contains about 70 tons of a plastic scintillator. This subsystem was produced exactly in time and was among the first to have registered neutrino events.

On 21 September, the Interdisciplinary Scientific Research Complex (ISRC) on the basis of the DC-60 cyclotron of heavy ions produced at JINR was inaugurated in Kazakhstan, in Astana, at the Gumilev Eurasian University.

DC-60 allows acceleration of atom nuclei from carbon to xenon to conduct fundamental and applied research in nuclear physics, nanotechnology, material sciences, and other applied technologies. On the eve of this event, design specialists from the Flerov Laboratory of Nuclear Reactions and the Institute of Nuclear Physics of the National Nuclear Centre (NNC) of Kazakhstan obtained the first ion beam. This unique facility produced by JINR and NNC specialists will bring the integration in science and education much further, as well as will advance leading techniques into real economy.

At the opening ceremony in the large hall of the Euroasian University, Minister of Education and Science of Kazakhstan B. Aitinova, Minister of Industry and Trade V. Shkolnik, Vice-Minister of Energy and Mineral Resources B. Akchulakov, JINR Director Corresponding Member of RAS A. Sissakian took the floor; the latter made the report «JINR: Yesterday, Today, Tomorrow», devoted to the 50th anniversary of the Joint Institute. Rector of the University S. Abdymanapov presented honorary medals of the University to FLNR Scientific Leader Academician Yu. Oganessian, JINR Vice-Director Professor M. Itkis, and A. Sissakian for their large contribution to the establishment of ISRC and development of cooperation of JINR and Kazakh scientists and specialists. The initiative to develop heavy-ion physics research on the basis of JINR–Kazakhstan cooperation was approved by the President of the Republic of Kazakhstan, Nursultan Nazarbaev.

The ceremony was attended by Deputy of RK Medzhlis (Parliament) G. Shalakhmetov, NNC General

Director Professor K. Kadyrzhanov, representatives of state, public and scientific organizations of RK, diplomatic missions accredited in Kazakhstan, and a group of specialists from the USA. The event was widely covered in the Kazakh mass media.

On 24 September – 1 October Director of the National Institute for Scientific Research of Venezuela Professor M. Garcia Sucre visited JINR. He took part in the XVIII Baldin seminar and was acquainted with activities of the JINR laboratories. At the JINR Directorate, issues of the development of cooperation in scientific and educational programmes were discussed. From the JINR side, JINR Director RAS Corresponding Member A. Sissakian, JINR Vice-Director Professor M. Itkis, Deputy Chief Scientific Secretary of JINR D. Kamanin took part in the negotiations. On 29 September JINR Director A. Sissakian and Professor M. Garcia Sucre signed a general agreement on cooperation of JINR with the National Institute for Scientific Research of Venezuela.

On 28 September Ambassador Extraordinary and Plenipotentiary of the Republic of India in Russia Mr K. Sibal visited JINR. At the JINR Directorate, the guest and the attendants were received by A. Sissakian, R. Lednický, N. Russakovich, D. Kamanin. Issues of widening the mutually fruitful cooperation were discussed during the talks. The Ambassador also visited the Flerov Laboratory of Nuclear Reactions.

On 12–16 October, in Moscow, the third meeting of the intergovernmental board on cooperation between Venezuela and Russia was held. Vice-Minister of Science and Technology of Venezuela Luis F. Marcano Gonzalez took part in it and, in the framework of this event, headed the sub-board on science, technology and protection of the environment.

On the invitation of the JINR Directorate, Mr Luis F. Marcano Gonzalez, Ambassador of Venezuela in Moscow Alexis Rojas and the accompanying persons visited the Joint Institute for Nuclear Research on 13 October. They visited the Flerov Laboratory of Nuclear Reactions, the Veksler and Baldin Laboratory of High Energies, were acquainted with the complex of proton therapy and activities at the Aspekt Scientific Industrial Centre. Opportunities for further widening of the scientific cooperation were discussed at the negotiations in Dubna.

On 12–14 October a delegation from JINR, including JINR Vice-Director Professor M. Itkis and JINR Directorate Advisor Professor P. Bogolyubov, visited Alma-Ata on the invitation of the National Academy of Sciences of the Republic of Kazakhstan and took part in the celebration of the 60th anniversary of RK NAS.

Representatives of the scientific community, the Government and leadership of Kazakhstan headed by President N. Nazarbaev gathered at the festive meet-

ing. Among outstanding achievements, N. Nazarbaev marked the launching of the accelerator complex in the Gumilev Eurasian University in Astana, which was designed and constructed with the leading participation of JINR scientists, engineers and workers. M. Itkis heartily congratulated Kazakh scientists on the outstanding event and presented an address of congratulation and a gift to RK NAS President M. Zhurinov.

A meeting of the Council of the International Association of Academies of Sciences (IAAS) was held on 12 October in Alma-Ata. JINR is an associate member of this organization. M. Itkis made a report on achievements at JINR and the development of cooperation with IAAS members. Regular elections of IAAS leaders were held at the meeting. Academician B. Paton, a distinguished scientist, president of the National Academy of Sciences of Ukraine, was re-elected IAAS President for a new term.

JINR representatives had meetings with Kazakh scientists during the visit and discussed prospects for further cooperation with them.

On 14–18 October a delegation of the Department of Science and Technology of the Republic of South Africa visited JINR. The guests had meetings in all JINR laboratories; they were acquainted with the main trends of research at JINR, including innovation issues (they visited the Aspekt Scientific Industrial Centre and had an excursion to the centre of proton therapy). They also had discussions at the JINR Directorate and in the laboratories, with leading scientists and specialists of the Institute taking part in them. On 18 October a Protocol was signed where basic scientific trends were traced to be developed in the cooperation of JINR with RSA scientific centres.

On 25 October, Vice-President of the Serbian Academy of Sciences and Arts S. Koički, First Counsellor of the Serbian Embassy in RF M. Lalič-Terzič, and Senior Specialist of the RAS department for foreign affairs A. Vinogradov visited JINR. At the meeting in the JINR Directorate they discussed a wide range of issues of cooperation among scientists from Serbia and JINR, which had been initiated by Academician G. Flerov. At present, an accelerator complex is being constructed in Belgrade with active support rendered by scientists and specialists from FLNR, JINR. Further joint research is proposed to be conducted in medicine, biology, and theoretical physics. As JINR Director A. Sissakian marked, the cooperation with Serbian scientists has not been ever terminated and the time has come to give it a new impulse.

In late October the JINR Directorate conducted several important meetings and negotiations connected with the establishment of a special economic zone and, in particular, its right-bank area. The main issues were financing and building, organization of the SEZ infrastructure, filling its sites with residents and high-

technology projects, and attraction of venture financing.

On 19 October Director of the Institute A. Sissakian and Assistant Director on Innovation Development A. Ruzaev had a meeting in Moscow with the owner and manager of the Konti building companies group T. Timerbulatov. General Director of the OAO Dubna–Sistema I. Lensky and member of the directors' council of the AFK Sistema N. Mikhailov took part in the negotiations. The sides discussed the concept suggested by T. Timerbulatov to establish a «health city» in the left-bank area of the Volga River, which includes a complex of scientific research centres, clinics and enterprises related to high-technology medicine. Similar structures in Europe (especially, in England and Germany) operate effectively and come into the integrated system «Bio City».

On 25 October Deputy Director of the Russian Federal Agency on special economic zones management (RosSEZ) M. Rychev and IT company president T. Yapparov visited JINR. At the JINR Directorate they were met by A. Sissakian, M. Itkis, A. Ruzaev, M. Ruzaeva, and I. Lensky. M. Rychev reported in detail about plans to attract SEZ residents to Dubna. JINR Director spoke about activities to organize innovation projects, and about the concept and project of the right-bank area. The information was highly appreciated by the RosSEZ representative. The sides agreed to cooperate in all issues of interest, including the projects which will be financed by the World Bank and the Russian venture company.

Contacts with the IT company are also regarded promising, as the company occupies the third place in the rating of Russian firms in the sphere of information technology. JINR personnel and innovation development management has already been operating jointly with the company in evaluation of efficiency of researchers' and organizations' work. T. Yapparov and A. Sissakian agreed to start an interesting project in education together with Dubna University.

On 26–27 October A. Sissakian met with Chairman of the directors' council of the AFK Sistema V. Evtushenkov, N. Mikhailov, and Head of the Science and Innovation Complex D. Muratov. In the negotiations, they discussed issues related to more active involvement of the Sistema corporation in the SEZ establishment and, in particular, first steps in the construction of infrastructure units and realization of the project «Ion-Plasma Technology Centre». The leaders of the corporation confirmed their commitment to the arrangements stated in the Agreement with JINR of 6 October 2004, and expressed their intention to develop more intensively their business in Dubna.

From 29 October to 3 November JINR Director Corresponding Member of RAS A. Sissakian and Deputy Director of BLTP Professor V. Voronov visited the Republic of Korea. The scientists were invited to the Asian Pacific Center for Theoretical Physics (APCTP)

and Pohang University of Science and Technologies (POSTECH). They visited two South Korean cities, Seoul and Pohang, where they were acquainted with the current research at APCTP and POSTECH, visited the Pohang Technopark, the Accelerator Laboratory of Synchrotron Radiation, and POSCO, the largest South Korean steel-casting company. This company renders essential financial support to the University and its research laboratories. A. Sissakian and V. Voronov gave talks on the JINR scientific programme and prospects of cooperation with South Korean physicists. The delegation was received by POSTECH President Professor Chan-Mo Park, APCTP Executive Director Professor Seunghwan Kim, Pohang Technopark Director-General Doctor Seong Jae Lee, and Director-General of the South Korean Foundation for Basic Research Professor Dong-Pil Min. During this visit, special steps were planned for the development of the cooperation between JINR and the Republic of Korea in the light of the agreements of JINR with APCTP and POSTECH signed in Dubna in July 2006.

On 3–7 November a JINR delegation headed by the Institute Director RAS Corresponding Member Professor A. Sissakian visited Vietnam. The delegation included JINR Vice-Director Professor M. Itkis, Chief Scientific Secretary Professor N. Russakovich, LIT Director Professor V. Ivanov, LIT Director Advisor Professor I. Puzynin, JINR Assistant Director G. Arzumanyan, and DLNP senior researcher Doctor Nguyen Manh Shat.

On 6 November, a ceremonial meeting dedicated to the 50th anniversary of the Joint Institute for Nuclear Research was held in the meeting hall of the Academy of Sciences and Technologies of Vietnam. It was attended by Vietnamese scientists and specialists who worked at JINR.

After Professor Nguyen Van Hieu greeted the audience, JINR Director A. Sissakian made a detailed review report on JINR scientific programme and international cooperation. The concluding part of his speech concerned the long-standing cooperation of JINR with scientific and educational centres in Vietnam, which became JINR member in 1956. Speaking about the joint achievements in realization of the JINR scientific research programme, A. Sissakian stressed the importance of attraction of young Vietnamese specialists, postgraduates, and students to JINR in 2007.

Professor M. Itkis spoke at length about the scientific programme of the Flerov Laboratory of Nuclear Reactions, marking impressive achievements in the synthesis of transuranium elements at JINR and the successful start of studies of their chemical properties.

The speakers on the Vietnamese side were Academician Nguyen Van Hieu, President of the Vietnamese nuclear society Doctor Vo Van Thuan, Professor Vo Hong Anh, and Professor Chan Dyk Thiep. They noted the fundamental role of JINR in the establishment of

nuclear physics in Vietnam, shared their vivid memories about the years spent in Dubna, remembering their famous teachers and leaders with warm words of gratitude. The scientific experience and know-how obtained at JINR allowed them to develop peaceful nuclear physics in Vietnam and sign cooperation agreements with many scientific centres in the world.

On 6–10 November a regular international workshop on the linear collider ILC was held in Valencia (Spain). It was organized by the European Committee on the ILC-ECFA accelerators and the Global Design Effort ILC group and gathered about 250 participants. Such workshops are held three times a year to discuss the status of events on the ILC projects. Work groups from Europe, America and Asia involved in the work-out and design of parts and elements, as well as an engineer infrastructure of the future accelerator complex, take part in it.

The Joint Institute was represented by JINR Chief Engineer G. Shirkov and his Deputy G. Trubnikov. Along with the daily meetings of the working groups, where each part of the future collider was discussed, a round-table discussion was held on the status of the ILC, which was attended by the project leader B. Barish, regional supervisors from Asia, America and Europe, ICFA chairman A. Wagner, DESY Scientific Director R. Heuer, representatives of the financial agency on future colliders. G. Shirkov spoke about the activities at JINR for this global project. The participants of the round-table discussion noted with satisfaction the growing efforts of JINR to join the ILC international team.

As a result of the negotiations with the GDE leaders, JINR (Dubna), together with Fermilab (USA), KEK (Japan), CERN, and DESY, has been acknowledged as an official candidate for the ILC accelerator complex site. The necessary documentation pack was accordingly prepared and presented by the State Specialized Project Institute (Moscow), with the total cost estimation on the composite estimate calculation of the construction work, underground and ground-based units of the main construction. Besides, JINR produced data on topography, the infrastructure, and other issues which will be included into the basic document on the ILC.

On 13–17 November a group of journalists from Poland visited JINR. It was headed by Director of a department of the State Agency on Atomic Energy of Poland, chief editor of the journal «Progress in Nuclear Technology» S. Latek. The delegation included journalists from scientific-technical journals, newspapers and radio stations of Cracow, Warsaw and Lublin. Doctor S. Latek and the Polish media representatives met with leading scientists of the Joint Institute, their fellow countrymen who work in Dubna, had a meeting at the JINR Directorate, visited laboratories and had a visit to the State Memorial Complex in the village of Mednoe in the Tver Region.

On 27–30 November JINR Director RAS Corresponding Member, Foreign Member of Armenian NAS A. Sissakian, FLNR Scientific Leader Academician Yu. Oganessian, FLNR researcher Doctor A. Matthiz, and JINR staff member, chairman of the coordinating committee on JINR–Armenia cooperation Doctor G. Torosyan visited Yerevan. They took part in a workshop to discuss the plan to establish in Yerevan a centre of radiation medicine on the basis of a cyclotron-type accelerator, with YePI and JINR participation.

Meetings and discussions were held with the Armenian vice-speaker V. Oganessian, RA Minister of Trade and Economic Development K. Chshmaretyan, RA NAS President R. Martirosyan, administration of YePI and YeSU, representatives of Armenian medical centres. A report to the President of Armenia, S. Kocherian, and Prime Minister A. Markaryan was prepared on the results of the workshop. Specialists from JINR, the Dubna–Sistema management company, YePI, and other organizations took part in the work-out of the draft of the business plan proposal.

In late November JINR Chief Scientific Secretary Professor N. Russakovich took part in the jubilee celebration events on the occasion of the 85th anniversary of the Belarussian State University in Minsk.

The ceremonial meeting was held in the concert hall «Minsk». Representatives of the President administration, the Parliament and the Government of the Republic congratulated the University community on the event. On behalf of JINR, N. Russakovich made a congratulation speech and presented University Rector V. Strazhev with JINR-logo souvenirs. Well-known in Belarus and abroad, the art and music teams of the University showed a big festive concert for the participants.

On 31 November, the scientific prizes instituted by BSU were presented at the meeting of the University Scientific Council dedicated to the jubilee event. The laureates made reports on the research results, heartily congratulated students, postgraduates, teachers and scientists on the jubilee. The report by N. Russakovich was included into the agenda of the Scientific Council and concerned JINR cooperation with institutes, universities and enterprises in Belarus.

During his stay in Minsk, JINR Chief Scientific Secretary had discussions with Plenipotentiary of the Government of the Republic of Belarus to JINR V. Nedilko, University Rector V. Strazhev on issues of progress in cooperation. An agreement was signed during the visit on the professional training of Belarussian students, postgraduates and young scientists at JINR.

On 3–5 December JINR Vice-Director Professor M. Itkis, Chief Scientific Secretary Professor N. Russakovich, and Assistant Director on Financial Issues V. Katrasev were on an official visit in the Republic of Azerbaijan. At the same time, on the initiative

of Azerbaijan Ambassador in Switzerland, a delegation of CERN managers was invited to Azerbaijan. CERN leaders addressed JINR with a suggestion to visit Azerbaijan in a joint delegation, taking into account the circumstance that Azerbaijan is a Member State of JINR having long-standing traditions of cooperation with the Institute.

CERN was represented by Assistant Directors J. Ellis and N. Koulberg, and the ATLAS project leader P. Jenni. President of the Academy of Sciences of Azerbaijan, Plenipotentiary of the Government of the Republic of Azerbaijan to JINR Academician M. Kerimov received the joint delegation. Besides general issues of the prospects of the cooperation of Azerbaijan with JINR and CERN, the JINR delegation discussed the aspects of widening and strengthening scientific contacts, attracting young scientists, and signed a Protocol on the arrangement of the payment schedule for the debt of Azerbaijan to JINR in a period of ten years. A meeting was held with Deputy Minister of Information Technology I. Mammadov, Chief of the Department of Science, Culture, Education and Social Issues I. Sadygov. A seminar was organized at the Institute of Physics of the Academy of Sciences of Azerbaijan, where reports on the prospects of scientific research at CERN and JINR were listened to with great interest.

The «Days of Russia in Azerbaijan» programme was finishing in Baku at the time. A large delegation of the Russian Government headed by M. Fradkov attended the festive events. The representative of JINR and CERN were invited to the final gala concert of ballet dancers.

On 4 December a delegation of the US Department of Energy headed by Deputy Director of the Department administration of the international protection of materials and cooperation J. Gerard visited JINR. The delegation included the Department staff member on issues of protection, account and control of nuclear materials P. O'shell and Deputy Director of the Department Office in Moscow M. Dash. JINR Director A. Sissakian, JINR Chief Engineer G. Shirkov, SCAR Director V. Samoilov, Chief of the Nuclear Safety Office V. Kartashov, Chief of the Department of Radioactive and Fission Materials B. Shestakov, JINR Deputy Chief Scientific Secretary D. Kamanin received the delegation.

The guests were acquainted with the history of the Institute establishment, modern position of the JINR international contacts, including US research centres; they visited the central storage of nuclear materials and the new protection building under construction. The leader of the delegation, J. Gerard, acknowledged that protection and safety measures at JINR are on a very high level.

On 4–5 December a delegation from Poland, headed by First Counsellor of the Embassy of the Republic of Poland, Chief of the Department for Assistance in Trade

and Investments A. Milota, visited Dubna. The delegation included the staff member of the RP Ministry of Finance Office in RF Counsellor-Minister K. Kordas, Second Secretary of the Embassy M. Reszuta, Director of the BGZ Polish bank office in Moscow K. Barcikowski, and his deputy V. Fadeev.

During the talk at the JINR Directorate, attended by JINR Director A. Sissakian, A. Ruzaev, G. Arzumanyan, W. Chmielowski, head of the SEZ territorial administration in the Moscow Region A. Rats, a wide range of questions on the establishment of a special economic zone in Dubna was discussed. The guests visited the Flerov Laboratory of Nuclear Reactions, where they saw the IC-100 facility and met with the Laboratory's Deputy Director S. Dmitriev and Scientific Secretary A. Popeko.

The delegation leader, A. Milota, said that Polish businessmen show much interest to the future special economic zone in Dubna, where Poland «has been present» for a long time participating in JINR activities. Businessmen from Poland have been working actively in the Russian market, investing into the Russian economy along with trading. It is important that Polish investments are 90 per cent direct; that means the establishment of new working places, development factors for those Russian regions where they work. Nuclear physics research conducted at JINR is a very big attraction for Polish businessmen, together with information technologies developed in the Institute. Joint efforts will give additional opportunities for commercial results from research in fundamental and applied science.

On 6 December a governmental delegation of the Republic of Serbia visited the Joint Institute. It was headed by Deputy Minister of Science and Environmental Protection I. Videnovic. The delegation also included the TESLA project leader N. Neszkovic («Vinca» Institute of Nuclear Sciences, Belgrade) and Director of the physics laboratory of this institute A. Dobrosavlevic. The guests visited FLNR, where they were acquainted with experimental facilities and fundamental and applied research conducted there. The Serbian delegation was interested in the trends of JINR research and elaborations in the framework of the special economic zone. They also expressed their interest in the ILC international project discussed at present globally.

Greeting the guests, JINR Director A. Sissakian noted that cooperation of JINR with Serbia today is taking a new form in the conditions of a different political situation. It has long-standing traditions, is conducted in ten trends, including theoretical physics, nuclear physics, elementary particle physics, neutron nuclear physics, and other topics. Several universities and institutes of Serbia are involved in joint projects with the Joint Institute. The question on the associate membership of Serbia to JINR was discussed at the

meeting. Both parts also considered the issues of staff members' exchange between JINR and Serbian centres, the conclusion of the project on the construction of the TESLA accelerator in Belgrade and cooperation issues which had been very intense in the previous years.

On 8 December a delegation of the International Scientific and Technical Centre (ISTC) and the Ministry for Foreign Affairs of Canada visited JINR.

The guests were received at the JINR Directorate. JINR Vice-Director M. Itkis acquainted them with the main trends of research at JINR. DLNP Director A. Olchevski spoke about the research in low- and intermediate-energy physics, hadron therapy at the Phasotron beams and joint experiments conducted at the TRIUMF centre in Canada. JINR Chief Engineer G. Shirkov informed the participants about the plans of cooperation with the TRIUMF centre in calculation of beam dynamics in cyclotrons. DLNP Deputy Director V. Shvetsov spoke about the SAD project. ISTC Vice-Executive Director L. Ovsacki acquainted the members of the JINR Directorate with the trends of activities of the Canadian side in the framework of the ISTC projects.

The delegation visited JINR laboratories. The guests were acquainted with research at the Phasotron beams at the Dzhelapov Laboratory of Nuclear Problems. G. Mitsyn spoke about the latest results and plans for hadron therapy. A. Moiseenko, leader of one of the ISTC projects supported by Canada, talked about the experiments which are planned at the Phasotron beams in the context of the ISTC project. During the visit to the Flerov Laboratory of Nuclear Reactions, A. Popeko dwelt at length on applied research at the Laboratory and acquainted the guests with the FLNR cyclotron complex and work on nuclear filters production. A meeting with the Directorate was organized at the Veksler and Baldin Laboratory of High Energies. It was attended by Professors S. Vokal, A. Kovalenko, and E. Donets. E. Donets talked to the colleagues about the latest results obtained at his ion source and plans of cooperation with the Canadian TRIUMF within the ISTC project.

On 26 December RF Minister of Economic Development and Trade G. Gref visited Dubna to become acquainted with the activities on the establishment of a technological-and-innovative special economic zone in the city. He took part in the meeting in the International Conference Hall.

JINR Director A. Sissakian showed the Minister the stands where integrated products and accomplished projects were exhibited: track membranes, methods of application of accelerators for proton and carbon therapy of oncological diseases, photon detectors of a new generation produced jointly with the centre of ion-plasma technology. He stressed the fact that about 50 projects could be brought to life in the innovation zone.

Making conclusions on his stay in Dubna, G. Gref said at the press conference, «The construction of all units — administrative, social, and infrastructural — will start in 2007. In 2008 it is to be accomplished. The SEZ project in Dubna is in the sufficiently advanced stage due to the support of the Governor of the region and his administration, the efforts of the city administration and, by all means, due to JINR. The Institute is the motor, the generator of the special economic zone. The enthusiasm of its Director and scientists allows us to take a number of decisions on the issue. No doubt, SEZ is a new life for the city and its workers and for all Russian science!»

On 26 December a joint meeting of the nuclear physics section of the RAS Department of Physics Sciences and the RAS Scientific Council was held in the Russian Academy of Sciences on the problems of charged particle accelerators. About 50 participants attended it; they were members of the NP section of DPS RAS, members of the Scientific Council, and invited leaders of scientific organizations and centres.

The meeting discussed two reports: the one by JINR Director RAS Corresponding Member A. Sissakian and the other by JINR Chief Engineer RAS Corresponding Member G. Shirkov on the design of the global project «International Linear Collider» (ILC), the project status, plans and execution of tasks. The key topic of the presentations was JINR's suggestion to locate the ILC in the region of Dubna and to start work and participate, along with Russian nuclear physics and scientific centres, in the design and construction of the elements and systems of the accelerator complex and the detector. It is known that JINR, as well as CERN, DESY, FNAL, and KEK, was officially acknowledged as a candidate to locate the collider in its territory.

Famous scientists took part in the long mutual discussion of the two reports. Academician S. Gershtein (IHEP) spoke about the international significance of this project and stressed the necessity to involve Russian physicists in it, especially as the basic concepts of the ILC are those that were developed by the Russian accelerator school. Academician S. Belyaev (RSC KI) drew the participants' attention to the complex character of the political problem of attracting the project to Russia and the necessity to support the project on the governmental level. RAS Corresponding Member L. Ponomarev (RSC KI) marked that even today, at the initial stage, it is important to organize the elections of the leaders for the Russian part of the project. RAS Corresponding Member N. Dikansky, NSU rector, pointed to the attractive prospects of the ILC for young Russian scientists and marked that the realization of such a national accelerator project would make many talented young Russian scientists who work abroad come back to their homeland. Academician G. Mesyats, PIAS director and RAS vice-president, vigorously supported the idea to draw the ILC project to Dubna in his talk, be-

cause, without any doubt, it would considerably encourage the revival of Russian science. He suggested that an initiative group should be organized of leading and most prestigious scientists of RAS to address the President of the Russian Federation for the support of the construction activities and their purpose financing.

RAS Corresponding Member A. Sissakian noted that Russia today does not have national projects of such a scale, though it possesses the necessary resources and technology. The fact that an international research insti-

tute — one in two in the world of this type — actively works in Dubna could also be a favourable circumstance for the choice of Russia and Dubna to install the ILC in the region.

The Chairman of the meeting Academician A. Skrinsky, director of the Budker INP, informed the participants about the work-out and realization of the fundamental research programme in high-energy physics and hoped that energetic efforts to develop the ILC project in Russia would promote the progress of the programme in the shortest time.

CONFERENCES AND MEETINGS HELD BY JINR

Eleven conferences were the largest among scientific conferences and workshops held at JINR in 2006.

On 17–23 January Dubna hosted the *XIII International interdisciplinary conference «Mathematics. Computer. Education»* (MCE), which is held every January alternately in Dubna and Pushchino, at the Center of Biological Research of the Russian Academy of Sciences. The Conference was organized on the basis of the JINR Laboratory of Information Technologies under active support of the University «Dubna». The MCE conferences, attended annually by more than 300 participants, differ from the majority of professional meetings in their scientific and educational orientation. Research workers, professors, lecturers, students, post-graduate students and school teachers came to Dubna from more than 40 Russian cities, as well as from Ukraine, Belarus, Kazakhstan, England, and Germany. The Conference was traditionally opened by reports delivered by JINR scientists. JINR Vice-Director Professor M. Itkis spoke about the history of the Institute and the most important newest discoveries. LIT Director V. Ivanov reported on new projects worked out at the Laboratory and the role of Dubna scientists in the European project GRID aimed at the creation and use of the distributed computing network. A conception of the global system of distributed computing was presented by LIT Vice-Director V. Korenkov.

Professor O. Kuznetsov, president of RANS and rector of the University «Dubna», Professor G. Reznichenko (MSU), chairman of the Organizing Committee of the Conference, and Professor G. Malinetsky, deputy director of the Keldysh Institute of Applied Mathematics, gave their presentations on the opening day. Professor Malinetsky's report about the strategic and economic status of Russia in present-day reality and the role of science and education in solving the problems confronting Russia generated great interest. The lively discussion was continued within the round-table session «Cultural Space of Russia», traditionally organized by writer Z. Zhuravleva.

Many of the participants got acquainted and made friendly and professional contacts with the University of

Dubna. At a plenary session Professor E. Cheremisina, pro-rector of the University «Dubna», presented a detailed report about the university and the prospects of its development, and gave a master-class on remote training at the university.

The day devoted to modern studies in biology was very busy too. Special attention was attracted by reports delivered by Professor E. Krasavin, director of the Laboratory of Radiation Biology, on biological research conducted at JINR, and by RAS Corresponding Member A. Rubin, head of Biophysics Department, Faculty of Biology, Moscow State University, who spoke about application of biophysical methods in research into fundamental problems of photosynthesis and ecological monitoring. A survey report of Professor G. Yelenin (Keldysh Institute of Applied Mathematics) about modern technical solutions in nanotechnologies should also be noted.

Great interest was generated by the reports devoted to economic subjects. They were delivered not only by recognized masters such as Professor A. Varshavsky (CEMI, RAS) and Professor D. Chernavsky (Lebedev Physical Institute, RAS), but also by Doctors of Sciences of a younger generation, who use advanced methods of physical and mathematical research for the economic parameters analysis (M. Romanovsky and A. Leonidov).

The University «Dubna» organized sections «Computers in Education» and «Humanitarian and Natural-Science Education», as well as a round-table session «Scientists — To Children» that was chaired by Doctor of Biological Science and the author of the well-known techniques of ecological education T. Potapova. A lot of leaders and employees of Dubna schools and kindergartens attended the meeting. A master class for Mathematics teachers was conducted by a known teacher of the Kolmogorov Boarding School at Moscow State University and an organizer of all-Russia olympiads J. Rabbot.

At the final session Professor Rudolf Pose spoke about the history of the collaboration of Russian and German scientists, for instance, in high-energy physics.

The programme of the Conference included sections of mathematical theories, computers in science and education, computing methods and mathematical simulation, models in chemistry, biology, ecology and medicine, analysis and modelling in economy and sociology, natural science and humanitarian education.

On 24–27 May the Frank Laboratory of Neutron Physics held the traditional annual *International Seminar on Interaction of Neutrons with Nuclei* (ISINN-14). It was the fourteenth seminar in the series of traditional annual meetings covering experimental and theoretical investigations of the interaction of neutrons with nuclei, fundamental properties of the neutron itself, methodical aspects of nuclear physics with neutrons.

The Seminar was attended by 115 participants, including 72 JINR scientists; 22 participants from Belarus (JINER), Bulgaria, Vietnam, Germany, Republic of Korea, Romania, the USA, France, and Japan; 21 participants from Russia.

Sixty-three oral and poster papers concerning various aspects of nuclear physics with neutrons, fundamental properties of the neutron, application of nuclear techniques in ecological studies were presented at the Seminar. The Seminar, as in the previous years, served as a tribune to present new results and also as a place of informal contacts among physicists from different scientific centres. It also contributed to establishing new scientific collaborations.

The traditional international conference «*Nuclear Structure and Related Topics*» (NSRT'06) was held at the Bogoliubov Laboratory of Theoretical Physics from 13–17 June. The Conference is organized every three years and the latest one was the fourth. At the end of the 1990s the NSRT conference maintained the tradition of the conferences and schools on selected topics in nuclear structure organized by the Joint Institute for Nuclear Research since 1968. The co-chairmen of the Organizing Committee of NSRT'06 were Professors V. Voronov and R. Jolos.

The Conference programme, composed with an active participation of the impressive International Advisory Committee, was closely correlated with the current studies in the field of low-energy nuclear physics at JINR, specifically at the Bogoliubov and Flerov Laboratories. The Conference programme contained experimental as well as theoretical talks.

The total number of the presented talks was 48. More than 100 physicists from 17 countries of Europe, Asia and America took part in NSRT'06. Among them there were 30 participants from the JINR Member States. The Conference was supported by the Russian Foundation for Basic Research, the Heisenberg–Landau programme and the Votruba–Blokhintsev programme. JINR scientists presented eight oral talks. A distinctive feature of the Conference was a high number of young reporters. They gave about 40% of the total number of talks. Half of the JINR speakers were young physi-

cists, others were from Czechia, France, Greece, Italy, Lithuania, Russia, Turkey. This feature seems to be of great importance because mutual scientific and human contacts of young investigators guarantee a continuity of international cooperation and thus a promising future for nuclear science.

The *European School on High Energy Physics*, organized by CERN and JINR, was held on 17–30 June in Aronsborg near Stockholm. About a hundred young physicists from JINR and CERN Member States took part in it. Among the lecturers and discussion leaders were famous scientists from JINR, CERN, Sweden, Italy, Russia, and other countries, including Academician V. Rubakov (the Institute of Nuclear Research, Troitsk) and A. Arbizov (JINR).

JINR Director RAS Corresponding Member A. Sissakian gave a lecture about the scientific programme of JINR. CERN Deputy Director-General J. Engelen spoke about scientific plans at CERN. Vice-President of the Royal Academy of Sciences of Sweden S. Kulander, member of the Nobel Prize committee S. Jarlskog, and other representatives of Swedish scientific and administrative structures greeted the participants of the school. The next school will be held in August 2007 in Czechia.

The second international conference «*Distributed Computing and Grid Technologies in Science and Education*» was held at the JINR Laboratory of Information Technologies from 26–30 June. The first conference, organized two years ago by LIT, became the first forum in Russia that brought together representatives of Russian centres and JINR Member States institutes working in this field. The second conference was attended by more than 200 specialists from 17 countries (Armenia, Belarus, Bulgaria, Great Britain, Germany, India, Poland, Romania, the USA, the Czech Republic, Slovakia, Switzerland, Sweden, Uzbekistan, Ukraine), from CERN, and 46 universities and research centres of Russia. Representatives of commercial enterprises, in particular CISCO and Craftway, took part in the conference.

The scientific programme of the Conference that included 96 reports and presentations covered the following topics: 1) creation and operating experience of Grid infrastructures in various areas of science and education; 2) methods and techniques of distributed computing; architecture, algorithms; 3) distributed processing and data storage; 4) organization of the network infrastructure for distributed data processing; 5) algorithms and methods of solving applied problems in distributed computing environments; 6) theory, models and methods of distributed data processing; 7) distributed computing within LHC projects; 8) design techniques and experience of using distributed information Grid systems. In the framework of the conference two tutorials on Grid — gLite system and NorduGrid — were organized.

The *International Symposium on Exotic Nuclei* (EXON-2006) took place in the town of Hanty-Mansiysk (Russia) on 17–22 July. It was jointly organized by JINR, GANIL (France), GSI (Germany), and RIKEN (Japan). This symposium, as it has become a tradition, dealt with the latest experimental and theoretical investigations on the synthesis and properties of nuclei far from stability, from very light to very heavy elements. For the last few years this field has been intensively developing — this is the main motivation to organize such regular scientific meetings. The previous symposium EXON-2004 was held in Peterhof near St. Petersburg (Russia). About 100 scientists from 15 countries came to Hanty-Mansiysk.

Lately many interesting results have been obtained in studies of the interaction of loosely bound light nuclei, such as ${}^6\text{He}$, ${}^8\text{He}$, ${}^6\text{Li}$, ${}^{11}\text{Li}$, etc. Here, sub-barrier fusion, as well as enhancement of transfer reaction cross sections below the Coulomb barrier has been revealed. These problems were discussed also at another session, where the results were presented on the search for the tetra-neutron, ${}^6\text{H}$ and ${}^7\text{H}$ carried out at other scientific centres: the physicists from GANIL (France) reported on the discovery of ${}^7\text{H}$ and the tetra-neutron using beams of ${}^8\text{He}$ and ${}^{14}\text{Be}$, respectively.

The results on the latest achievements in the synthesis of superheavy elements at JINR FLNR, GSI, and RIKEN were reported by representatives from these scientific centres.

One session was dedicated to studying the decay properties of heavy elements, including fission. In this field new effects have been discovered, in particular the manifestation of shell effects at high excitation energy, the competition between fission and quasi-fission, collinear cluster decay into several fission fragments. All these processes are extremely important in the choice of future methods of synthesis of new elements.

One day of the Symposium was dedicated to applied physics. The talks on the development of radiation therapy at heavy-ion beams in Japan were of great interest. The contacts on the use of track membranes, manufactured at FLNR for medical appliances and radiobiological investigations at JINR were also interesting. The achievements of the scientists from Dubna were demonstrated at the exhibition of products made in Dubna and by the Aspekt company in the field of monitoring, nanotechnologies, and medicine.

On 27 July the *XXXIII International Conference on High Energy Physics* (ICHEP'06) was ceremonially opened in the large hall of the Russian Academy of Sciences in Moscow. The Joint Institute for Nuclear Research took an active part in the organization of the Conference.

About a thousand scientists from many countries of the world took part in it. The topics of the Conference traditionally dealt with most urgent issues in high-

energy physics, its accelerator and instrumental basis. Besides, for the first time a new section was introduced which covered GRID technologies and distributed calculations in high energy physics.

At the opening of the Conference, Chairman of the Organizing Committee, member of the RAS Presidium, Director of the Institute for Nuclear Research Academician V. Matveev reminded the audience that in 1964 the Rochester conference was successfully held in Dubna and this time it was organized in Russia again. This fact demonstrates immense scientific potential of Russian scientists and the acknowledgement of their outstanding contribution to the development of such an important field of modern natural sciences as particle physics. The participants of the Conference were greeted by Member of the RAS Presidium, Director of the Institute of Nuclear Physics of SD RAS Academician A. Skrinsky, Pro-Rector of Moscow State University Professor V. Belokurov. JINR Director Corresponding Member of RAS A. Sissakian spoke in his report about the history of holding the Rochester conference in the former Soviet Union, marking that it was the International Union of Pure and Applied Physics that initiated the organization of the present conference in Russia. Thus, Russian physicists are well known and in demand in the world. A. Sissakian also thanked the organizers and members of the Conference Organizing Committee for their work.

After the opening ceremony, a press conference for Russian and foreign journalists was organized. It was attended by Professor K. Patrini (INFN Physics Department, Genoa, Italy), MSU Pro-Rector Professor V. Belokurov, Chairman of the IUPAP Commission on Particles and Fields G. Herten, RAS Academician V. Rubakov (INP RAS, Troitsk), Director of MSU SRINP Professor V. Savrin, Chairman of the Board of Directors at DESY Professor A. Wagner (Hamburg, Germany), JINR Director RAS Corresponding Member A. Sissakian, Director of the Institute of Nuclear Physics of SD RAS Academician A. Skrinsky, Director of the RAS Institute for Nuclear Research Academician V. Matveev, Director of the Institute of High Energy Physics (Beijing, China) Professor Chen Hesheng, STAR collaboration leader of the Brookhaven National Laboratory (USA) T. Hallman, the Conference scientific secretary G. Kozlov (JINR, Dubna).

More than 300 reports and 100 poster presentations were made at the plenary and parallel sections of the Conference. The one-day cultural programme included excursions about famous historical places in Moscow and the region. On the final day of the Conference Academician V. Rubakov (INP, Troitsk) made a concluding review «Results and Prospects».

The last week of September celebrated a regular *Baldin Workshop on High Energy Physics Problems* in the conference hall of the Bogoliubov Laboratory of Theoretical Physics, which became number 18. The

tradition of holding scientific forums from this series was started in 1969. This time, it coincided with the 80th anniversary of Academician Alexander M. Baldin's birth, the founder and leader of this workshop for a long period of time, which is named after him now.

The Chairman of the Organizing Committee, A. Sissakian, began the Workshop with warm words of memories about A. M. Baldin. Vice-chairmen V. Burov and A. Malakhov prepared a memorial talk on A. M. Baldin's contribution to the conceptual basis of relativistic nuclear physics, in particular to the experimental study of the cumulative effect. Anton A. Baldin gave an overview on the invariant approach of describing the multiproduction which had been developed in collaboration with A. M. Baldin during several years. A participant of the first workshop and practically of all the next ones, N. Konopleva, reminded the attendants about the appearance of the gauge field theory, which had been used as a first application in the vector dominance theory.

More than 130 abstracts of talks had been obtained from experimentalists and theorists from JINR, JINR Member States, as well as from scientists of other research centres. The main topics of this international workshop are: QCD at large distances; physics of relativistic heavy ions; spectroscopy of hadrons and multi-quark states; structure functions of hadrons and nuclei; multiparticle dynamics; spin physics and polarization studies; studies of exotic nuclei in relativistic beams; relativistic beams for applied research; experimental achievements on high-energy accelerators; accelerator complexes of the present and future. A large number of talks on these topics have shown how strongly the physicists are interested in developing further their research in the above directions. About 20 talks were presented by young scientists.

Since 1996 the International Union of Crystallography (IUCr) has been regularly organizing workshops «*Crystallography at High Pressures*» on the basis of the leading world research centres where investigations at high pressures are carried out. The latest international workshop in this series organized by the IUCr Commission on High Pressures and the Frank Laboratory of Neutron Physics (FLNP) was held in Dubna on 28 September – 1 October.

More than 80 participants from the research centres of Russia, Poland, France, Germany, Great Britain, the USA, Canada, South Africa, and Japan took part in the Workshop.

The discussion of the reports made at the Workshop has shown that high-pressure investigations performed at JINR at the IBR-2 reactor and in other Russian research centres are carried out at a high international level.

In view of the forthcoming long shutdown of the IBR-2 reactor for planned modernization in 2007, the international workshop «Crystallography at High Pres-

ures» has undoubtedly played an important part in establishing new contacts with other research centres, on the basis of which the continuation of scientific investigations in this direction will be possible within the framework of the JINR strategic development plan in the field of condensed matter.

On 23–27 October Dubna hosted the *V All-Russian Conference on Radiochemistry* («Radiochemistry-2006»). It was organized by the Russian Academy of Sciences, the Federal Agency on Atomic Energy (Rosatom), the Interdepartmental Scientific Council at the RAS Presidium and Rosatom, the Joint Institute for Nuclear Research.

Chairman of the Conference Organizing Committee Academician B. Myasoedov opened the impressive forum of radiochemists. The first plenary reports were made by Professor S. Dmitriev («Radiochemical and Radioanalytical Research at the Flerov Laboratory of Nuclear Reactions») and by Academician Yu. Oganessian («New Elements of the Mendeleev Periodic System. Synthesis and Properties»).

At the plenary and section meetings, participants of the Conference discussed fundamental issues in radiochemistry, methods of radionuclide determination, methods of extraction and splitting of radioactive elements, radiochemical techniques, questions of radioactive wastes handling, application of tagged atoms, nuclear medicine, radionuclide behaviour in the environment.

On the final day of the Conference, the results of the section meetings were summed, and the book by a famous radiochemist, one of the organizers of this conference series Professor M. Vladimirova «Science Is My Tender Passion» was presented. The names of the laureates of the 3rd Russian competition of papers by young radiochemists were announced.

In 2006 the world scientific community celebrated the 80th birthday of Professor Abdus Salam, a laureate of the Nobel Prize, the founder and for many years the director of the International Centre for Theoretical Physics (ICTP), Trieste, Italy. On 24 November an *All-Institute Seminar* dedicated to the scientific and panhuman heritage of this outstanding scientist was held in the conference hall of the Bogoliubov Laboratory of Theoretical Physics.

Opening the Seminar, JINR Director RAS Corresponding Member A. Sissakian noted the remarkable contribution of A. Salam to the world treasury of knowledge, his indefatigable efforts aimed at the development of international scientific cooperation and training of young scientists.

Charge d'Affaires a.i. of Pakistan in Russia Syed Sail Abbas took the floor at the Seminar. Attache on science of the Italian Embassy in Russia Professor P. Spillantini spoke about multifarious activities of Abdus Salam in science and struggle for peace, equally directed to East and West, North and South. JINR Sci-

entific Leader Academician V. Kadyshevsky illustrated his presentation with documents and photographs. Academician A. Tavkhelidze spoke about close personal friendship between Professor A. Salam and Academician N. Bogoliubov and cooperation between Dubna and Trieste. Professor A. Filippov noted the desire of Abdus Salam to eliminate contradictions as one of the motivating forces in his scientific activities and illustrated it with a number of his theoretical papers, marking that the elimination of contradictions in relations of nations and people was no less important for A. Salam.

Ex-diplomat, the author of Professor A. Salam's scientific biography Yu. Khaliullin spoke about the highest

prestige of the scientist among political leaders of the third world who realized the significance of education, science and high technology for economic progress and attaining political stability. Speaking at the Seminar, RAS Corresponding Member N. Bogoliubov (jr.) and Professor P. Bogolyubov reconstructed the atmosphere of warm meetings in Dubna, adding new touches to the portrait of the outstanding scholar.

To conclude the Seminar, Academician D. Shirkov marked once more the vivid bondage and unity of theoretical schools of A. Salam and N. Bogoliubov. Life and scientific work of these outstanding scientists are a worthy example for future generations of physicists.

PARTICIPATION OF JINR IN INTERNATIONAL CONFERENCES

In 2006 JINR scientists and specialists participated in 206 international conferences.

The largest delegations representing JINR attended the following events: the International Workshop on the Design of a Superconducting Cyclotron for Carbon Therapy (Louvain-la-Neuve, Belgium); the International Workshop on Classical and Quantum Integrable Systems (Protvino, Russia); XL PINP Winter School on Physics of Atomic Nucleus and Elementary Particles (Repino, Russia); the International GERDA Collaboration Meeting on the Detection of the Neutrinoless Ge-76 Double Beta Decay (Heidelberg, Germany); the ITEP School on Theoretical Physics (Moscow, Russia); the International Conference on Reaction Mechanisms and Nuclear Structure at the Coulomb Barrier (Venice, Italy); the International Symposium on Heavy Ion Physics (Frankfurt am Main, Germany); V Congress on Radiation Research (Radiobiology, Radioecology, Radiation Safety) (Moscow, Russia); the Arctic Spring Workshop of the Jyväskylä University Accelerator Users (AWS'06) (Saariselkä, Finland); the international seminar «Quarks-2006» (St. Petersburg, Russia); the international conference «Current Problems of Nuclear Physics and Atomic Energy» (Kiev, Ukraine); the international conference «Meson-2006» (Cracow, Poland); the International Conference on Nuclear Reaction Mechanisms (Varenna, Italy); the international conference «Research Reactors in the 21st Century» (Moscow, Russia); the 10th European Particle Accelerator Conference (Edinburgh, Great Britain); the 25th International Workshop on Nuclear Theory (Sozopol, Bulgaria); VI international conference «Ion Implantation and Other Applications of Ions and Electrons» (ION-2006) (Kazimierz Dolny, Poland); the International Workshop on Cyclotrons for Hadron Therapy (Louvain-la-Neuve, Belgium); VII international conference «Radioactive Nuclear Beams» (Cortina d'Ampezzo, Italy); the Baikal School on Physics of Elementary Particles

and Astrophysics (Irkutsk, Russia); the multiconference «CryoPrague 2006» (Prague, Czechia); the 15th International Laser Physics Workshop (LPHYS'06) (Lausanne, Switzerland); the 18th International IUPAP Conference on Few-Body Problems in Physics (FB-18) (Santos, Brazil); IX International Conference on Nucleus–Nucleus Collisions (NN-2006) (Rio de Janeiro, Brazil); the international summer school on physics «Collective Motions and Phase Transitions in Nuclear Systems» (Predeal, Romania); the European Powder Diffraction Conference (EPDIC-10) (Geneva, Switzerland); the 56th International Conference on Problems of Nuclear Spectroscopy and Atomic Nucleus Structure (Sarov, Russia); XX Russian Particle Accelerator Conference (RUPAC-2006) (Novosibirsk, Russia); the 23rd International Conference on Nuclear Tracks in Solids (Beijing, China); the 9th international workshop «Computer Algebra in Scientific Computing» (Kishinev, Moldova); XIX Russian Workshop on the Use of Neutron Scattering in Condensed Matter Research (Obninsk, Russia); the Small Triangle Meeting 2006 (STM-2006) (Herlani, Slovakia); the 11th International Seminar on Electromagnetic Interactions (EMIN-2006) (Moscow, Russia); the conference «Selected Topics on Nuclear Methods for Non-Nuclear Applications» (Varna, Bulgaria); the 17th International Spin Physics Symposium (SPIN'06) (Kyoto, Japan); the 5th international conference «Methods of Non-Euclidean Geometries in Modern Physics» (BGL-5) (Minsk, Belarus); the international workshop «Grid Activities within Large Scale International Collaborations» (Sinaia, Romania); the workshop «Beam Energy Measurement» (Yerevan, Armenia); II workshop «Light Ions–Nuclei Collisions» (LINC-2006) (Protvino, Russia); the European conference «Accelerators for Industrial and Medical Applications» (ECPM) (Nice, France); the International Linear Collider (ILC) Workshop (Valencia, Spain).

**DEVELOPMENT OF THE JINR INTERNATIONAL COLLABORATION AND RELATIONS
DURING THE YEARS 1965–2006**

	1965	1975	1985	1990	1995	2000	2005	2006
1. Number of visits to JINR by specialists from Member States (excluding participants in JINR conferences)	203	1026	1469	1050	299	425	339	389
2. Number of visits by JINR specialists to Member States	171	474	600	778	682	682	927	854
3. Number of conferences and meetings organized by JINR	19	42	49	44	52	54	65	53
4. Number of visits to international conferences and research centres of non-Member States	69	131	119	437	1451	1946	2150	2028
5. Number of visits of scientists from non-Member States	27	226	144	563	1036	990	733	747
6. Number of JINR fellows	—	11	3	16	28	17	21	20

LIST OF CONFERENCES AND MEETINGS HELD BY JINR IN 2006*

No.	Name	Place	Date	Number of participants
1.	Meeting of the Steering Committee for the BMBF–JINR Agreement Implementation	Dubna	17–19 January	20
2.	99th session of the JINR Scientific Council	Dubna	19–20 January	113
3.	13th international conference «Mathematics. Computer. Education»	Dubna	17–23 January	200
4.	Workshop «Neutrino Physics at Accelerators»	Dubna	25–27 January	30
5.	4th Winter School on Theoretical Physics	Dubna	29 January – 7 February	50
6.	Meeting of the JINR Finance Committee	Dubna	16–17 February	90
7.	Workshop of the European Research Group on Ultra Relativistic Heavy Ion Physics	Dubna	9–15 March	30
8.	Meeting of the Committee of Plenipotentiaries of the Governments of the JINR Member States	Dubna	24–25 March	205
9.	Ceremonial Meeting Devoted to the 50th Anniversary of JINR	Dubna	26 March	800
10.	100th session of the JINR Scientific Council	Dubna	27 March	150
11.	X workshop «Nucleation Theory and Its Applications»	Dubna	1–30 April	62
12.	Session of the Programme Advisory Committee for Condensed Matter Physics	Dubna	3–4 April	54
13.	Session of the Programme Advisory Committee for Nuclear Physics	Dubna	6–7 April	47
14.	Session of the Programme Advisory Committee for Particle Physics	Dubna	20–21 April	48
15.	First International TUS Collaboration Meeting	Dubna	23–27 April	50
16.	International workshop «Relativistic Nuclear Physics: From Hundreds of MeV to TeV»	Modra, Harmonia, Slovak Republic	21–28 May	70
17.	XIV International Seminar on Interaction of Neutrons with Nuclei	Dubna	24–27 May	130
18.	VII international workshop «Lasers in Research of Atomic Nuclei»	Poznan, Poland	28 May – 3 June	51
19.	Baikal Collaboration Workshop	Dubna	30 May – 2 June	50
20.	International conference «Nuclear Structure and Related Topics»	Dubna	13–17 June	110
21.	V Workshop on Investigations at the IBR-2 Reactor	Dubna	14–17 June	60
22.	XV international colloquium «Integrable Systems and Quantum Groups»	Prague, Czech Republic	15–17 June	60

*A number of conferences were held in association with other organizations.

No.	Name	Place	Date	Number of participants
23.	European School on High-Energy Physics	Aronsborg, Sweden	17–30 June	130
24.	II international conference «Distributed Computing and Grid Technologies in Science and Education»	Dubna	26–30 June	123
25.	International Summer Student Practice in JINR Fields of Research	Dubna	2–22 July	77
26.	Technical meeting «Upgrade of Nuclear and Radiation Safety Control at Research Reactors»	Dubna	3–8 July	20
27.	XII international conference «Symmetry Methods in Physics»	Yerevan, Armenia	3–8 July	63
28.	School and workshop «Calculations for Modern and Future Colliders»	Dubna	15–25 July	76
29.	International Symposium on Exotic Nuclei (EXON-2006)	Khanty-Mansiysk, Russia	17–22 July	86
30.	International seminar «Symmetry and Spin»	Prague, Czech Republic	19–26 July	65
31.	XXXIII International Conference on High Energy Physics (ICHEP'06)	Moscow, Russia	27 July – 2 August	1097
32.	International School on Few-Body Problems in Physics	Dubna	7–17 August	63
33.	International School on Hot Points in Astrophysics	Dubna	21 August – 1 September	70
34.	International conference «Mathematical Modelling and Computational Physics» (MMCP-2006)	Kosice, Slovak Republic	28 August – 1 September	60
35.	NA48 Collaboration Workshop	Dubna	3–10 September	52
36.	International School on Modern Mathematical Physics	Dubna	3–12 September	70
37.	11th Conference of the RDMS CMS Collaboration (RDMS CMS–2006)	Varna, Bulgaria	11–18 September	58
38.	NEMO Collaboration Workshop	Dubna	16–21 September	74
39.	International conference «New Trends in High-Energy Physics»	Yalta, Ukraine	16–23 September	45
40.	II international seminar «Molecular Simulation Studies in Material and Biological Sciences»	Dubna	19–20 September	25
41.	XVIII Baldin International Seminar on High Energy Physics Problems	Dubna	25–30 September	160
42.	International seminar «Crystallography at High Pressures»	Dubna	28 September – 1 October	85
43.	Introductory Course and Training «Neutron Applications at the IBR-2 Pulsed Reactor»	Dubna	1–8 October	33
44.	International conference «Dynamical Aspects of Nuclear Fission» (DANF'06)	Smolenice, Slovak Republic	2–6 October	60
45.	International Small-Angle Scattering Workshop	Dubna	5–8 October	77
46.	Round-table discussion «Searching for the Mixed Phase of Strongly Interacting Matter at the JINR Nuclotron: Nuclotron Facility Development»	Dubna	6–7 October	48
47.	V All-Russian Conference on Radiochemistry («Radiochemistry-2006»)	Dubna	23–27 October	215
48.	International NIS Project Workshop	Dubna	2–3 November	25
49.	Session of the Programme Advisory Committee for Nuclear Physics	Dubna	13–14 November	47
50.	Session of the Programme Advisory Committee for Condensed Matter Physics	Dubna	16–17 November	53
51.	Session of the Programme Advisory Committee for Particle Physics	Dubna	23–24 November	46
52.	All-Institute Seminar Devoted to the 80th Birthday of Abdus Salam	Dubna	24 November	209
53.	Baikal Collaboration Workshop	Dubna	5–8 December	50