

COLLABORATION IN SCIENCE AND TECHNOLOGY

The basic results of the international cooperation in science and technology of the Joint Institute for Nuclear Research in 2009 reflect the following data:

- joint research has been conducted with scientific centres in the Member States, as well as international and national organizations in other countries on 40 topics of first priority and 5 topics of second priority;
- to solve cooperation issues and questions of participation in scientific meetings and conferences, the Joint Institute sent 2540 specialists;
- for joint work and consultations, as well as for participation in meetings, conferences and schools held at JINR, 1701 specialists were received;
- 37 international scientific conferences, 19 workshops and 13 meetings were organized and held;
- 10 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 13 January, a meeting of the Organizing Committee on the preparation to the centenary of the birth of Academician N.N. Bogoliubov was held at the Presidium of the Russian Academy of Sciences. RAS Vice-President Academician V. Kozlov opened the meeting and informed the participants about the issue of the Decrees by RF and Ukraine Presidents «On the Celebration of the Centenary of the Birth of N.N. Bogoliubov».

JINR Director Academician A. Sissakian reported on the implementation of the jubilee events plan and proposals to eternize the memory of N.N. Bogoliubov. The International Bogoliubov Conference «Problems of Theoretical and Mathematical Physics» was one of the key events of the jubilee year. The conference took place in Moscow and Dubna from 21 to 27 August. The participants also visited the Novode-

vichie Cemetery and laid flowers to the tomb of N.N. Bogoliubov. Another conference under the same title was held in Kiev on 15–18 September. To eternize the memory of Nikolai Nikolaevich Bogoliubov, it was proposed to name after him streets in Moscow and Kiev, to install memorial plaques in Moscow and Kiev Universities, the Steklov Mathematics Institute of the Russian Academy of Sciences and JINR, to issue a pre-stamped envelope and a souvenir coin to the jubilee, to organize mobile exhibitions dedicated to the life and work of the scientist. It was planned to publish cycles of papers in scientific and science-fiction periodic journals, to produce a film about the life and creative activities of Academician N.N. Bogoliubov. JINR prepared for publication a jubilee booklet about N.N. Bogoliubov. Starting from February 2009, a series of jubilee scientific seminars were held in Dubna. The geography of the festive events included a number of scientific centres from JINR Member States which are connected with the scientist's biography.

The secretary of the conference Organizing Committee G. Kozlov reported on the plan and the agenda of the Bogoliubov Conference; the executive editor Professor A. Sukhanov spoke on the implementation of the project to publish the total collection of scientific works by N.N. Bogoliubov in 12 volumes.

The meeting of the Organizing Committee was attended by Academicians V. Kadyshesky, V. Matveev, A. Tavkhelidze, A. Slavnov, D. Shirkov, Professor V. Savrin, Minister of Science and Industry of the Moscow Region government V. Kozyrev, Professor P. Bogoliubov, Professor B. Sadovnikov, RAS Corresponding Members N. Bogoliubov (Jr.), I. Volovich, and others.

On 20 January, Minister-Counsellor of the Science & Technology Department of the Republic of South Africa (RSA) Embassy in Moscow Dr. N. Arendse and Technology Research Programme Manager Mr. J. Eksteen visited JINR.

At the meeting with JINR representatives, the guests noted the importance of the development of cooperation with JINR in such areas as nanotechnologies, biotechnologies and high performance computing. Other important issues were discussed at the meeting (the application of the JINR computing infrastructure, the instruction of South African specialists in Grid-technologies and the construction of the cyclotron in the Republic of South Africa).

During the visit the South African guests were shown FLNR, LIT and the Special Economic Zone «Dubna».

On 26–27 January, regular meetings of the Coordinating Committee on the Implementation of the Agreement on cooperation between the Federal Ministry of Education and Research of Germany (BMBF) and JINR were held in Zeuthen (Germany). The meetings were co-chaired by Chief of the fundamental research department of BMBF Doctor R. Kepke and JINR Director Academician A. Sissakian.

The major result of the meetings was to prolong the Agreement on cooperation between JINR and BMBF until 2011. The main scientific results obtained at JINR in 2008, the scientific research programme for 2009, preparation of the seven-year plan of JINR development, modern tendencies in scientific policy in fundamental natural sciences in Germany and Europe were discussed. The delegations listened to the status reports of large scientific projects implemented in Germany — the accelerator complex FAIR project and the project to develop an X-ray laser on free electrons XFEL. The sides noted with satisfaction the successful development of cooperation among German and JINR scientists.

The sides also considered the financial report on spending the sums provided by BMBF for the Agreement implementation. Taking into account mutual interests, the German contribution in 2009 was increased up to 1175 thousand euros. The next meeting of the Coordinating Committee will be held in February 2010 in Dubna.

On 5 February an opening ceremony of the memorial plaque in honour of D. I. Mendeleev was held on the Volga embankment. On behalf of the Moscow Region government and the Governor B. Gromov, First Deputy of the Minister of Industry of the regional government Yu. Vorontsov congratulated the citizens of Dubna on the significant event. The honorary right to open the plaque was given to Director of the Flerov Laboratory of Nuclear Reactions S. Dmitriev. The inscription on the plaque says: «The embankment is named after the great Russian scientist, the creator of the Periodic Table of chemical elements in the acknowledgement of the outstanding service of Dubna scientists in the synthesis of new superheavy elements of the Periodic Table and the development of D. Mendeleev's theory». The memorial plaque is installed on a column of one of the embankment rotundas.

JINR Director Academician A. Sissakian arrived in Dubna from Geneva **on 9 February**. During his short working visit, he had his first official meeting with the new CERN Director-General Professor R.-D. Heuer. Discussions of the cooperation issues between the two international organizations resulted in a decision to prepare a new General Agreement with partnership programmes on JINR–CERN cooperation, where along with JINR groups that take part in the preparation and conducting of experiments at CERN, the participation of CERN specialists in Dubna programmes is specified.

A. Sissakian also met with CERN Research and Computing Director Professor S. Bertolucci, member of the CERN Directorate, Coordinator for External Relations Professor F. Pauss, CERN Directorate Advisers on cooperation J. Ellis, T. Kurtyka, N. Koulberg, spokesman of the OPERA experiment Professor A. Ereditato, Professor G. Piragino (Turin, Italy) and other persons.

On 12 February, IUPAC President Professor Jung-II Jin accompanied by RAS Corresponding Member, member of the IUPAC office, Director of the Institute of Chemistry and Sustainable Development of the D. Mendeleev University of Chemical Technology of Russia N. Tarasova visited JINR. At the meeting at the JINR Directorate Academician A. Sissakian acquainted the guests with the history of the establishment of the international scientific centre in Dubna and its achievements. The guests visited the Flerov Laboratory of Nuclear Reactions, where they were shown the experimental facilities and fundamental and applied research conducted at them. Professor Jung-II Jin expressed his impressions of his visit to Dubna in the following words: «I am happy to be in Dubna. Having visited the Flerov Laboratory of Nuclear Reactions, I was greatly impressed to see a very high level of scientific research. The fact that more than 20 countries take part in the activities of JINR demonstrates very high acknowledgement of Dubna, its reliability in partnership contacts and great value of the research conducted here».

In early March, a delegation of the Arab Republic of Egypt headed by President of the ARE Agency on Science and Technology Professor Mohamed Tarek Hussein was at JINR on a two-day visit. At the JINR Directorate, the guests were received by JINR Director A. Sissakian, JINR Scientific Leader V. Kadyshevsky, JINR Vice-Directors M. Itkis and R. Lednický. The delegation from Egypt was acquainted with the history of JINR foundation and its scientific policy, fundamental research trends, innovation projects, the educational programme and new opportunities in the Special Economic Zone.

As a representative of the ARE Agency on Science and Technology, Professor M. T. Hussein spoke about its structure and contacts with the scientific community, their cooperation with European and Asian countries, and «the four P cycle» used in the activities of the

Agency: from publication to the patent, prototype and the final product.

On 3 March, JINR Director RAS Academician A. Sissakian and President of the ARE Agency on Science and Technology Professor M. T. Hussein signed the Agreement on the Associate Membership of the Arab Republic of Egypt to JINR.

On 11 March, Ambassador Extraordinary and Plenipotentiary of Montenegro to RF Slobodan Backović and his spouse visited JINR. A former physicist from Yugoslavia, he had worked at JINR for many years. The Ambassador was received at the JINR Directorate and at the VBLHEP Directorate; he also visited the Nuclotron, met with his former colleagues and had an excursion to FLNR where he saw the U-400M and IC-100 accelerators.

JINR Director Academician A. Sissakian spoke to the guests about the activities at the Institute, the upgrading of the basic facilities, applied research, innovation and educational activities. The guests from Montenegro were especially interested in attracting young specialists to science, and improving the qualification of school teachers. S. Backović noted the necessity to strengthen scientific ties of Montenegro with JINR. He said that primarily it is important to develop scientific cooperation in the sphere of training of young specialists.

A working meeting of the RF Government Plenipotentiary to JINR RF Minister of Education and Science A. Fursenko with JINR Director A. Sissakian was held **on 12 March** in Moscow. They considered issues of current activities of JINR, preparation to the sessions of the JINR Finance Committee and the Committee of Plenipotentiaries, the development of international cooperation. Deputy Head of the Rosnauka administration V. Drozhenko and JINR Assistant Director on Financial Issues V. Katrasev took part in the meeting.

A delegation of the state corporation «Russian Nanotechnology Corporation» (SC «Rosnanotech») headed by its General Director A. Chubais visited Dubna **on 13 March**. Dubna Mayor V. Prokh, JINR Director A. Sissakian, Head of the Federal Agency on Special Economic Zones' Management («RosSEZ») A. Alpatov, Deputy Chairman of the government of the Moscow Region, Minister of Transport of the Moscow Region government P. Katsyv, General Director of OAO «Special Economic Zones» S. Levkin, Chairman of the Directors' Council of ZAO «Trackpore Technology» V. Kononov, and Head of the RosSEZ Territorial Management in the Moscow Region A. Rats met the delegation.

A presentation about the city, the Dubna SEZ and nanotechnology projects was demonstrated at the Congress centre of the Dubna special economic zone. V. Prokh and A. Alpatov made reports. In the Congress centre the guests saw an exhibition of projects of the city enterprises and organizations that work in the

sphere of nanotechnology. «Rosnanotech» Head was greatly interested by the JINR innovative projects — the Multiple-Access Centre «Nanotechnologies», the Ion-Plasma Technology Centre and the Centre of Technology for Atomic Energy Industry and Radiation Medicine.

Then the guests visited the Flerov Laboratory of Nuclear Reactions, where A. Sissakian gave a presentation about JINR scientific programme and the project of the International Innovation Centre for Nanotechnology. A. Chubais and A. Alpatov saw the basic facilities of the laboratory and were informed about the fundamental and applied research projects in the sphere of nanotechnology.

After that the «Rosnanotech» delegation had a visit to the scientific-industrial complex «Alfa» of ZAO «Trackpore Technology». Head of the company V. Kononov gave a detailed review of the project to develop high technology production of medical equipment for cascade blood filtration, where «Rosnanotech» takes part in the project financing.

The visit was concluded with a ceremonial opening of the first element of the International Nanotechnology Centre in Dubna — the ZAO «NANO KASKAD» site in the right-bank territory of the special economic zone. A Protocol on the results of the visit was signed.

On 24–26 March, Ambassador of the Republic of Serbia to the Russian Federation Professor Yelitsa Kuryak and the Cooperation Coordinator between the Scientific Organizations of Serbia and JINR Professor of the Faculty of Sciences in Novi Sad University Miodrag Krmar visited Dubna. The main result of the visit was the signing of the Protocol on boosting joint action in the frames of the Agreement on cooperation between the Republic of Serbia and JINR.

A meeting of the Organizing Committee for the preparation and celebration of the centenary of the birth of N. N. Bogoliubov was held **on 27 March** in Moscow at the Presidium of the Russian Academy of Sciences, on the basis of the RF Government Direction and in pursuance of the Order of the RF President.

A plan of the main preparatory events on the celebration of the Great Russian scientist's jubilee was discussed and adopted at the meeting. The Organizing Committee meeting was presided by RF Minister of Education and Science A. Fursenko and RAS President Academician Yu. Osipov (Co-Chairmen of the Organizing Committee); the event was also attended by Academicians V. Kozlov (Deputy Chairman of the Organizing Committee, RAS Vice-President, Director of the RAS Steklov Institute of Mathematics), V. Matveev (Academician-Secretary of the RAS Department of Physical Sciences, Director of the RAS Institute for Nuclear Research), V. Sadovnichii (MSU Rector), A. Sissakian (JINR Director) and L. Faddeev (Academician-Secretary of the RAS Department of Mathematical Sciences).

The Organizing Committee members highly evaluated the work done by the Joint Institute for Nuclear Research together with the Russian Academy of Sciences in the preparation to the jubilee of N. N. Bogoliubov, especially, the completion of the unabridged academic edition of the Scientific Works' Collection by N. N. Bogoliubov in 12 volumes (the «Nauka» Publishing House). This edition is unique because it includes the papers by N. N. Bogoliubov that have never been published before in one collection. The Organizing Committee members also praised the preparation of the International Bogoliubov Conference «Problems of Theoretical and Mathematical Physics» to be held on 21–27 August 2009 in Moscow (RAS) and Dubna (JINR).

In addition to the events approved by the Organizing Committee, the following undertakings were planned: a joint ceremonial meeting of the RAS Presidium, the JINR Scientific Council and the Scientific Council of the Lomonosov Moscow State University in October 2009 in Moscow; the Bogoliubov Readings at institutes and universities of Moscow and Dubna; issue of a commemorative coin, an envelope and a stamp; organization of a photo exhibition «N. N. Bogoliubov and His Role in World Science» and an exhibition of his scientific works in Moscow, Dubna, Kiev and Prague; the publication of a bibliographic booklet to the centenary of N. N. Bogoliubov's birth; production of a cycle of tele- and radio-programmes dedicated to N. N. Bogoliubov and the role of natural sciences in the development of society; installation of memorial plaques in memory of N. N. Bogoliubov in Dubna and Moscow; application to the administration of Moscow for entitling one of Moscow streets after N. N. Bogoliubov and erecting a monument to the great scientist in Moscow.

On 29 March, a delegation of the Republic of Tajikistan headed by President of the Academy of Sciences of the Republic of Tajikistan Academician of RT AS Mamadsho Ilolov visited JINR.

Possible trends of scientific cooperation between Tajikistan and the Joint Institute were discussed at the meeting at the JINR Directorate. President of RT AS M. Ilolov recalled an old tie between JINR and Tajikistan: an expedition to study space rays at the Pamir station in 1944–1945 was headed by one of the founders of the Joint Institute for Nuclear Research Academician V. Veksler. M. Ilolov marked that JINR is an example of scientific cooperation. Director of the S. Umarov Institute for Physics and Technology of RT AS Corresponding Member of RT AS Khikmat Muminov, who was a staff member of the Bogoliubov Laboratory of Theoretical Physics in 1996–1999, spoke about the opportunities in the Tajik science in the sphere of nuclear physics and astrophysics.

M. Ilolov expressed his confidence that in the near future an intergovernmental agreement would be signed

between Tajikistan and JINR as a basis for cooperation in the scientific sphere, to make it possible for Tajikistan to get involved later in the activities at the Joint Institute as its full member. As JINR Director Academician A. Sissakian stressed, maintaining consolidated intellectual space is the vital basis for the achievements of high scientific results.

On 30 March, a delegation of the state administration of the People's Republic of China on foreign experts affairs, headed by Deputy Chief of the administration Zhang Jianguo visited JINR. It also included representatives of the Chinese Embassy in Moscow headed by the Minister-Counselor of the Science and Technology Department of the Embassy Yu Mingdou.

In the talks at the JINR Directorate, the sides discussed the issue of restoration of China's membership to JINR, various trends for scientific cooperation between China and JINR, including the Institute resources in education and training and academic exchange of students. The Chinese delegation visited FLNR and the International University of Nature, Society and Man «Dubna».

A delegation of the Institute of Medical and Biological Problems (IMBP) headed by Director RAS Corresponding Member, RAMS Academician I. Ushakov visited the Joint Institute for Nuclear Research **on 9 April**. JINR Director Academician A. Sissakian received the delegation. R. Lednický, N. Russakovich, E. Krasavin, G. Timoshenko, S. Tyutyunnikov, G. Arzumanyan took part in the meeting at the Directorate.

A. Sissakian spoke to the guests about the history of the Institute, the main trends of research and basic facilities, plans for development that follow the JINR «Road Map». According to A. Sissakian, any advanced research centre should base itself upon core frame projects, modern accelerators, respective computer capacity and be sustained by the educational and innovation components. The guests were impressed by the given talk demonstrating interest to the special economic zone and the centre for proton therapy intended to be constructed there.

As I. Ushakov said, the Institute of Medical and Biological Problems is extremely interested in cooperation with the JINR Laboratory of Radiation Biology in many directions of research that are indicated in the LRB seven-year programme of radiobiological studies at heavy-ion accelerators scheduled up to 2016. These are radiation genetic studies, research in the field of action of accelerated heavy ions on the eye structures and analysis of neurophysiological reactions in irradiated animals. The meeting was concluded with awarding I. Ushakov the Diploma and the Medal issued to the centenary of Academician N. Sissakian's birth. The guest from IMBP had excursions to the Laboratory of High Energy Physics and the Laboratory of Radiation Biology.

An extended session of the RAS Presidium «The Large Hadron Collider — a New Step to Deep Cog-

tion of Matter. Russia's Part in the International Mega-Project» was held **on 14 April**. It was presided by Academician Yu. Osipov. Academician-Secretary of the RAS department of physics sciences V. Matveev and RAS Presidium Member JINR Director Academician A. Sissakian made co-reports at the session.

V. Matveev spoke in detail about physics tasks and the part Russian scientists play in the international mega-project LHC at CERN. He also talked about issues of participation in the development of the collider.

A. Sissakian spoke about the large contribution of JINR theorists, experimenters, coordinators, accelerator specialists, engineers and technologists into the project of the 21st century. In his report, he gave a brief account of the integrating role of the Institute for the interested Member States, primarily, CIS countries, and, in particular, the role of industrial enterprises of the Member States in the production of unique orders for the LHC. A. Sissakian also touched upon several chapters of the JINR scientific programme (complementary to programmes of CERN and other world scientific laboratories) that will replenish our knowledge on the structure of matter (the NICA project, etc.).

RAS Vice-Presidents Academicians G. Mesyats and A. Andreev, Academician V. Rubakov (NPI, Troitsk), RAS Corresponding Member V. Ritus (IP RAS, Moscow), Professor N. Tyurin (IHEP, Protvino) and other scientists took part in the discussion of the reports.

Summing up the results of the session, RAS President Academician Yu. Osipov marked once again the outstanding contribution of scientists from Russian scientific centres and JINR into the research of the microworld mysteries, including the development of the Large Hadron Collider and the elaboration of its scientific programme.

On 15 April, the 7th meeting of the JINR–RSA Joint Coordinating Committee was held in Cape Town. JINR Chief Scientific Secretary Professor N. Russakovich headed the delegation from JINR. On the RSA side, Deputy Director-General of the Department on Science and Technology of the RSA government Professor J. Seleti presided the meeting. The key issues of the meeting were the discussion of the cooperation status and measures to streamline the mechanism of efficient trilateral contacts of the Department and RSA scientific community with JINR, as well as financing joint programmes and RSA contribution to the JINR budget.

The day before, on 14 April, a working meeting was held at the National Cyclotron Laboratory iThemba LABS on the discussion of JINR proposals to develop the RSA scientific research infrastructure. Deputy Head of the FLNR Accelerator Department I. Kalagin spoke about the potentials at JINR to develop new facilities. As an example, the DC-60 cyclotron, developed at JINR FLNR for the Interdisciplinary Scientific Research Cen-

tre in Astana (Kazakhstan), was mentioned at the meeting. Head of the Accelerator Department of the Almaty Institute for Nuclear Research S. Lysukhin told the participants about their experience in constructing, launching and operating the DC-60 cyclotron. Representatives of South African organizations and scientific groups met JINR proposals with great interest.

The JINR official delegation visited Pretoria University in the frames of the Coordinating Committee meeting. There seminars were held on the nanostructure analysis with neutron methods (Professor A. Belushkin) and ion-track membrane technology (D. Kamanin). Further steps were arranged to develop cooperation, primarily, the reciprocal visit of Head of the Physics Department Professor J. Malherbe to Dubna and participation of the university students and postgraduates in the current JINR summer school.

The JINR delegation visited the Nuclear Energy Corporation of South Africa (NECSA) where a presentation was given on opportunities to equip radiochemical laboratories in the partnership with the German «Gamma-service» group (A. Matis). NECSA representatives informed the guests about the status of the reactor on antifriction fuel elements and exchanged views on possible joint projects.

President of the South African Institute of Physics (SAIP) Professor N. Chetti received the delegation from JINR and informed the guests about the annual SAIP conference in Durban that was scheduled for the beginning of July and expressed his confidence that the participation of JINR in this forum would be extremely useful and interesting for South African researchers. Next meeting of the Committee was held on 30 October in Dubna.

On 23 April, Attache on Science and Technology of the Embassy of France in Russia Michele Tararine visited JINR. At the JINR Directorate, JINR Vice-Director M. Itkis, JINR Chief Scientific Secretary N. Russakovich, Assistant Chief Scientific Secretary D. Kamanin welcomed the guest.

A physicist by education, M. Tararine expressed great interest in the history of JINR establishment and cooperation with French physicists, the information on JINR basic facilities and main trends of research. He said: «Our countries are very actively cooperating in nuclear physics and elementary particle physics. And it is a convincing motive to become acquainted with your centre. To my mind, today physics makes the main part of cooperation between Russia, where physics research is very well developed, and France. Actually, our countries have already been maintaining close cooperation for over 200 years». After the meeting at the Directorate the guest visited the Laboratories of Nuclear Reactions and High Energy Physics.

In early May, JINR Director Academician A. Sissakian stayed in France and Czechia on working visits. During his meetings with leading scientists

and officials, he discussed issues of including the scientific research base of JINR into the «Road Map» of the European Community. On 4 May, a special proposal was prepared addressing European Commissioner for Science J. Potočník, on the results of the meeting with Plenipotentiary of the Government of Czechia to JINR Professor R. Mach and Representative of Czechia at EC Co-Chairman of the JINR Scientific Council Professor I. Wilhelm.

On 5 May, A. Sissakian attended the International conference «Selected Issues of Theoretical Physics and Particle Physics» in Prague which was dated to the 70th anniversary of the birthday of Professor I. Niderle, an outstanding Czech scientist. On behalf of JINR staff members, A. Sissakian congratulated the scientist on the jubilee and presented him the Commemorative Medal of Honour of JINR. JINR Director made a review report at the first plenary meeting of the conference on the JINR scientific programme and plans for development. Leading scientists made reports at the conference, including Professors J. Engelen, P. Jenni, A. de Ruhula (CERN), Academician L. Faddeev (Russia), Professor E. Ivanov, S. Krivonos (JINR), Academician I. Todorov (Bulgaria), and others.

On 6–7 May, a meeting of the JINR–Czechia Cooperation Board was held. JINR was represented by JINR Vice-Director M. Itkis, JINR Chief Scientific Secretary N. Russakovich, FLNR Director S. Dmitriev. The participants of the meeting discussed a wide range of cooperation issues.

A seminar was held on 9 May in Rez dedicated to the 90th anniversary of the birthday of the outstanding scientist Professor C. Simane — ex-Vice-Director of JINR, and Member of the JINR Scientific Council for many years. The scientist was awarded the Commemorative Medal of Honour of JINR for an outstanding contribution to science and development of the Institute.

On 14 May, Days of Moldavian Science opened at JINR. Representatives of the Moldavian Academy of Sciences, the Embassy of the Republic of Moldova in RF, the Embassies of Azerbaijan, Romania and Ukraine were received at the JINR Directorate and visited the Laboratory of High Energy Physics and the Laboratory of Nuclear Reactions.

The Republic of Moldova is one of the eighteen JINR Member States. In March 1992 the JINR Committee of Plenipotentiaries granted Moldova admission to the JINR Membership. JINR cooperation with scientific centres of the Republic of Moldova is conducted in condensed matter physics, the theory of strongly correlated systems with applications to the theory of high-temperature superconductivity and the heavy fermions theory and properties of electron–phonon systems. The following scientists take an active part in these studies: L. Kon, V. Moskalenko, M. Palistront (the Institute of Applied Physics, MAS), E. Pokatilov and V. Fomin (the Moldavian State University), M. Vladimir (the Techni-

cal University), as well as other staff members of these institutions. The long-standing fruitful cooperation involves the JINR Laboratory of Theoretical Physics with the group of Professor K. Gudima from the MAS Institute of Applied Physics. Now his pupil A. Parvan works at LTP, JINR.

On 15 May, round-table discussions «Cooperation in Science and Basic Personnel Training: Achievements and Prospects. Reforms in Science and Innovations» were held in the Congress Centre of the Dubna Special Economic Zone. Leading scientists and specialists from JINR and scientific centres of Moldova, young Moldavian scientists, students and postgraduates took part in them.

«We regard Dubna as a site for cooperation aimed at the development of science in all our Member States», said JINR Director Academician A. Sissakian opening the round-table discussion. He also told the participants the breaking news: the basic facilities of JINR were included into the complex of the European scientific infrastructure.

The participants of the round-table discussion considered in detail all aspects of the multifaceted cooperation between the Joint Institute and the Republic of Moldova. The First Vice-President of the Moldavian Academy of Sciences Academician T. Furduj spoke about the reforms in science and innovations in the Republic, reminding the audience about the close ties between the Moldavian and Russian scientists that were brought to life in 1946, even before the Academy of Sciences of the Moldavian Socialist Republic was founded in 1961.

In his report, MAS Academician V. Moskalenko expressed his views on the prospects of scientific cooperation. Deputy Director of the JINR UC S. Pakuliak talked about cooperation of Moldova and JINR in education. According to his words, four students from Moldova are studying now at the Institute. Following the Agreement between JINR and MAS, the Joint Institute is committed to train three holders of the Master's degree for Moldova annually. The guests from Moldova heard with great interest the detailed report by Deputy Chief Engineer of JINR G. Trubnikov on the latest news about the project of the NICA/MPD accelerator complex, where the Moldavian scientists are actively involved.

The second meeting in the programme of the Days of Moldavian Science concerned innovative activities. «For the first time the Days of Science in a Member State take place in the territory of the special economic zone, — marked Academician A. Sissakian. — It is a sign to start a new phase in our cooperation where, together with fundamental research and educational programme, innovative elaborations will play a considerable role».

Plenipotentiary of the Government of the Republic of Moldova to JINR MAS Corresponding Member I. Tiginyanu informed the audience on considerable

achievements of Moldavian scientists in nanotechnology — spintronics, photonics and the method to grow tubular nanostructures.

The participants of the round-table discussion listened with great interest to the reports made by representatives of JINR laboratories. FLNR Deputy Director A. Popeko spoke about the R&D of nuclear-physics and applied research at the accelerators of the Flerov Laboratory of Nuclear Reactions. Director of the Laboratory of Radiation Biology Professor E. Krasavin reported about methods and results of radiation genetic research at LRB. Junior researcher of the Frank Laboratory of Neutron Physics A. Khokhryakov spoke about studies in condensed matter physics at the IBR-2 reactor.

Plenipotentiary of the Government of the Republic of Moldova to JINR MAS Corresponding Member I. Tiginyanu marked, «The Days of Moldavian Science in Dubna are a unique opportunity to organize a meeting for scientists to contact each other. Such meetings inspire us for further cooperation between our countries».

On the invitation of the Ministry of Science and Technological Development of the Republic of Serbia, an official delegation from JINR headed by JINR Director Academician A. Sissakian visited Belgrade and Novi Sad **on 18–20 May**. The visit was organized by the Serbian side according to the protocol on stirring up joint activities in the frames of the Agreement on cooperation between the Republic of Serbia and JINR signed on 26 March in Dubna by Extraordinary and Plenipotentiary Ambassador of the Republic of Serbia in RF J. Kurjak. The JINR delegation included JINR Vice-Director Professor M. Itkis, FLNR Scientific Leader Academician Yu. Oganessian and Head of the International Cooperation Department D. Kamanin.

The first working meeting was held on 18 May at the Institute for Physics of Belgrade University. Director of the Institute Professor D. Popović spoke about the main trends of activities and the laboratories of the Institute. In particular, he suggested that JINR Administration consider a possibility to conduct joint experiments at the low-background laboratory of the Institute for Physics. Academician A. Sissakian gave a lecture on the JINR scientific programme and cooperation with scientific and educational centres of Serbia. Representatives of the Serbian scientific community attended the meeting and listened to the lecture.

The JINR delegation visited the Vinča Institute of Nuclear Science and saw the building of the cyclotron complex where the TESLA project is implemented and the large cyclotron VINCY developed jointly by staff members of the Vinča Institute and JINR. According to the leading specialists of the project Professors N. Nešković and A. Dobroslaović, the readiness condition of the cyclotron to produce the first beam is about 80%. Taking into account the full preparedness of the building, the percentage of this condition is in total much more.

On 19 May, JINR representatives met with Deputy Prime-Minister and Minister of Science and Technological Development of Serbia B. Djelic. Among other topics, they discussed opportunities to complete as soon as possible the TESLA project. Ambassador Extraordinary and Plenipotentiary of RF in the Republic of Serbia A. Konuzin took part in the meeting. As the Minister said, taking into account the prestige of JINR and Dubna proposals to organize first experiments in fundamental science and partnership in applied issues, the TESLA project could become a model of successful international scientific cooperation of Serbia.

B. Djelic and A. Sissakian also discussed first-priority steps to establish full-scale Serbia–JINR cooperation in the frames of the Agreement signed in 2007, and exchanged views on other issues. The Minister accepted the invitation to visit JINR in autumn 2009. On 19 May in the evening, the Dubna delegation was received at the Serbian Academy of Sciences and Art where Yu. Oganessian — a Foreign Member of the Academy since 1997 — gave a lecture on the discovery of supeheavy elements.

The next working meeting took place at the University of Novi Sad on 20 May. University Professor Acting Assistant Minister on Science and Technological Development M. Vesković and cooperation coordinator Professor M. Krmar met the delegation from Dubna. The important result of the meeting was the sides' arrangement to receive first young scientists from Serbia in Dubna at the end of this year (evidently, they will be from Novi Sad).

A video conference was held **on 20 May** at the Veksler and Baldin Laboratory of High Energy Physics for the members of the Machine Advisory Committee (MAC) on the projects Nuclotron-M and NICA. JINR Vice-Director Professor R. Lednický made an introductory speech and stressed the importance of the NICA project for the Institute. He wished the participants successful work. The leader of the video conference was MAC Chairman B. Sharkov, one of the leaders of the terra watt storage facility at ITEP, Head of the Russia–FAIR (Germany) Centre. Among the MAC members were representatives of leading scientific centres of the world: CERN (Switzerland), GSI, DESY, the Jülich centre (Germany), BNL, FNAL (USA) and other organizations.

The conference programme included two reports on the current status of the VBLHEP accelerator complex and elaboration of a new accelerator-collider project. VBLHEP Deputy Director G. Trubnikov made the first report where he spoke about work to implement the Nuclotron-M project. Immense amount of work was done in very short time: the upgrading of the accelerator vacuum system is close to its accomplishment; elements of the cryogenic complex are radically upgraded; control and diagnostics systems are being developed; work is continued to develop ion sources of the neces-

sary intensity. After the report, all MAC members and experts asked questions and expressed their views on the topic.

The second report was about the elaboration of the new accelerator project. It was made by I. Meshkov, who mainly focused the audience's attention on those changes in the concept of the construction that took place in the last six months. Firstly, it concerned the decision to use those ions as the main type whose collision would be implemented in the first stage of the project, namely, the gold ions — instead of uranium as it had been planned before. It considerably relieves the requirements to all elements of the collider injection chain, starting with the ion source and finishing with the accelerator system of the Nuclotron and, due to the large energy of ions in their recharge into absolutely stripped nuclei at the exit from the booster, provides about three times larger intensity of the accelerated bunch. Considerable progress was achieved in the design of the electron cooling system of the collider. Based on numerical calculations of the cooling process, a decision was taken to use a superconducting solenoid with a field of several kilogausses in the cooling section. The high-voltage source for the system (electron energy must be 2.5 MeV) is being developed jointly with the All-Russian Electrotechnical Institute (Moscow). Studies are continued of the dynamics of polarized beams in the Nuclotron and the collider rings.

The discussion took the most time of the video conference that continued for three hours. The atmosphere was very benevolent. The discussion was less aimed at finding drawbacks in the NICA complex and its systems. Its purpose was mostly to indicate possible underlying problems, to give advice what should be done first, basing on the experience of operation of the existing facilities, and to facilitate the project successful implementation.

A delegation of the International Science and Technology Centre (ISTC), headed by Executive Director Adriaan van der Meer, visited JINR **on 22 May**. The guests were greeted by JINR Director A. Sissakian, JINR Vice-Director M. Itkis, JINR Chief Scientific Secretary N. Russakovich. Leaders of all JINR laboratories also took part in the meeting. The guests got acquainted with the main trends of research at JINR and plans for the Institute development. They discussed issues of cooperation between JINR and ISTC and had an excursion to FLNR.

Summing up the results of the visit, the ISTC Director said: «The aim of our visit to JINR is to examine the process of implementing those projects which are ISTC financed. At present, we back up seven projects at JINR. In fact, we have sponsored 33 scientific-technical projects at the Joint Institute for the 15 years of our cooperation, allocating more than 4 million dollars. The main sponsored trend is nuclear physics, but we also finance new trends, for example, on the nuclear-physics

medical equipment development. It is very important for us to sponsor the fundamental research that will finally lead to the production of the final product and bring it to the market, delivering real benefits to the consumers. We intend to define directions and a strategy of our further interactions in various projects and to consider opportunities of joint financing. These aims are recorded in the final protocol of our meeting. As both JINR and ISTC are international organizations, we have exchanged some experience in our work. Having been actually acquainted with the Institute experimental base, we will choose an experimental facility that will receive increased attention of ISTC».

A delegation of Egyptian specialists headed by Director of the Tabbin Institute for Metallurgical Studies (Cairo) Doctor Mohamed Hamal Halifa visited JINR **on 27 May**. The guests visited FLNR and VBLHEP, and had a meeting with JINR Vice-Director M. Itkis. The Vice-Director marked that cooperation with Egypt on a new level of an Associate Member of JINR was at its start, and its main scientific trends should be urgently formulated. M. Itkis stressed the necessity to involve young Egyptian scientists into cooperation of JINR and scientific centres of Egypt. «Many our young staff members are very excited with the new opportunities of cooperation with JINR, — said M. H. Halifa. — We plan to hold joint meetings to train young specialists from various research centres in Egypt». The visit resulted in signing an Agreement on scientific-technical cooperation between the institutes.

Representatives of Embassies of the EU member countries visited Dubna **on 29 May**. The delegation included secretaries and advisers on science and technology of the Embassies of Malta, Spain, Finland, France, Czechia, Estonia, and members of the EC office in Russia.

During the meeting with the JINR leaders the diplomats got acquainted with the present activities of the Joint Institute and prospects for its development, JINR cooperation with the European Commission and participation of the Institute in European scientific programmes. The guests visited the Flerov Laboratory of Nuclear Reactions where they listened with interest to the information on the achievements in the synthesis of new superheavy nuclei and innovative elaboration of the scientists. The delegation also had a visit to the technological-innovative special economic zone «Dubna», i.e., the right-bank site where nuclear physics and nanotechnology are planned to be developed and where, under the support of the Russian Corporation of Nanotechnology, large-scale production of modern medical equipment, namely, nanocascade filters for blood purification, is being developed. The guests were acquainted with the projects of the Joint Institute in nanotechnology and radiation medicine, elaborations and production of nanostructured materials, innovative products of Research and Production Centre «Aspekt», the «Trackpore

Technology» company, and a number of other promising projects.

President of the Pugwash movement of scientists Jayantha Dhanapala visited JINR **on 4 June**. The distinguished guest had a meeting with JINR Director Academician A. Sissakian at the JINR Directorate where he was awarded the Commemorative Medal of Honour of JINR. J. Dhanapala was informed about the activities at the Joint Institute. It was stressed during the talks that the research at JINR is exclusively aimed at the peaceful use of the energy of nuclei and particles.

As Mr. J. Dhanapala said, his visit to Dubna (with JINR as the main part of it) is very important for him as the Institute has long-standing traditions of cooperation with the Pugwash movement of scientists and has contributed greatly to the development of science in the frames of peaceful use of nuclear energy. His opinion is that the Joint Institute as an international nuclear research centre is an illustrative model of effective cooperation aimed at the exclusively peaceful use of atomic energy and consolidation of efforts to maintain peace on the planet. J. Dhanapala cited A. P. Chekhov who said that there is no national science like there is no national multiplication table. «And it is absolutely true. Science brings nations together», said the President of the Pugwash movement.

On 10 June, a delegation of the State Foundation of Natural Sciences of the People's Republic of China, headed by Vice-President of the Foundation Professor Shen Vencin, visited JINR. The aim of the visit was to become acquainted with topic of research at JINR and establish personal contacts with the JINR Directorate and leading specialists. At the JINR Directorate, the guests were received by A. Sissakian, N. Russakovich, G. Kozlov, and D. Kamanin. The delegation had excursions to the Laboratory of Nuclear Reactions and the Laboratory of High Energy Physics.

On 10 June, the signing of the Agreement on academic exchange between the Joint Institute for Nuclear Research and the scientific postgraduate courses of Tokyo University for 2009–2014 took place at the International Conference Hall. JINR Director Academician A. Sissakian, Deputy Head of the JINR management of the scientific-organizational activities and international cooperation D. Kamanin, Head of VBLHEP sector Doctor of Physics and Mathematics V. Ladygin on the JINR side and Professor of the Nuclear Research Centre of Tokyo University T. Uesaka on the Japanese side took part in the ceremony. The Agreement stipulates joint scientific research, training of students and postgraduates, exchange of specialists and organization of joint scientific events.

In the frames of the 2004–2009 Agreement, joint research was conducted on studies of spin structure of light nuclei at the RIKEN (Japan) and Nuclotron (JINR) accelerator complexes. The research results

were widely acknowledged internationally in physics of few-nucleon systems and polarization phenomena; they were reported at international conferences and published in prestigious scientific journals. This research will be continued at the Nuclotron-M/NICA accelerator complex, in the frames of the DSS project adopted to be implemented in 2010–2012, with first priority at the 31st meeting of the PAC for Particle Physics.

MFA Adviser of the Republic of Chile on external economic issues Gregorio Navarrete visited JINR **on 22 June**. During his meeting with JINR Director Academician A. Sissakian, the Chilean diplomat was acquainted with achievements and opportunities at the Institute.

According to Gregorio Navarrete, the interest to cooperation with the Joint Institute for Nuclear Research is determined by urgent needs of Chile in the development of its own energy industry, including nuclear power. The undoubted prestige of Dubna scientists in research of peaceful atom and the traditionally high level of scientific studies, both fundamental and applied, could assist not only in developing science in Chile but also in attracting universities and research institutions of Chile to large-scale cooperation with Russia. Probation courses for Chilean young scientists and specialists in Dubna will be the first step in joint Chile–JINR activities.

On 1–2 July, the organizational-informational forum «Establishment of the International Innovation Centre for Nanotechnology of CIS Countries (CIS IICNT)» was held in Dubna at the International Conference Hall. Its organizers were the Joint Institute for Nuclear Research, RRC «Kurchatov Institute», the International Association of Academies of Sciences (IAAS), the Federal Agency for administration of special economic zones under the support of the Intergovernmental Foundation for Educational, Scientific and Cultural Cooperation of CIS member states (IFESCCO).

About 100 representatives of ministries, national academies of sciences, chambers of commerce and industry, largest scientific and educational centres, leading state and private corporations of CIS countries in high technology took part in the event. The concept of establishment and development of CIS IICNT in Dubna as an integrated centre that coordinates the process of the high-technology market growth in CIS nanoindustry was presented and discussed at the forum. Substantial opportunities and advantages for its members were demonstrated, and recommendations for further work were adopted.

A delegation from the Islamic Republic of Iran visited JINR **on 3 July**. It included the Dean of the Nuclear Engineering Department of the Sharif University of Technology (Teheran) Ja'far Tofigi, Head of the Iranian Atomic Energy Office in Moscow Adel Chaichiyan, and the staff member of the Scientific-Industrial Department of the Iranian Embassy in Moscow Masud Marvi.

At the reception at the JINR Directorate J. Tofigi spoke about the history of establishment of the Sharif University of Technology and its departments and gave examples of international cooperation of the University with various foreign educational institutions. In particular, he marked: «Due to the fact that JINR has accumulated great experience in nuclear physics research we would like to define directions of our future cooperation. We would be very glad to invite your specialists to give lectures at our University and are ready to send to Dubna our students for short- and long-term training». Head of the Iranian Atomic Energy Office in Moscow A. Chaichiyan expressed willingness to develop cooperation between JINR and departments of the Atomic Energy Organization of Iran.

A. Sissakian thanked the guests for the visit and expressed his consent to exchange delegations of scientists in order to define the research directions of mutual interest in future cooperation.

On 3 July, Head of the Moscow Office of the Helmholtz Association Martin Sandhop visited JINR. He was received by JINR Director A. Sissakian, JINR Vice-Director M. Itkis, JINR Chief Engineer G. Shirkov, Deputy Chief Scientific Secretary of JINR D. Kamanin, Professor D. Blaschke (BLTP), M. Avdeev (FLNP). A. Sissakian informed the guest about the history of the establishment of the Institute, founders of its scientific schools, basic facilities and research trends. Expressing his gratitude for the interesting account on JINR activities, M. Sandhop spoke about their close contacts with JINR in the DESY experiments and the ILC project. «We would be very glad if Dubna is chosen for the ILC location», he stressed. An Agreement between JINR and the Helmholtz Association was discussed and signed. Doctor M. Sandhop visited JINR laboratories that had long been a dream of his, as he confided.

On 6 July, President of the Atomic Energy Agency of the Republic of Poland Michael Waligórski and Ambassador of the Republic of Poland in RF Jerzy Bahr came to JINR on a visit. At the JINR Directorate the guests were received by JINR Director A. Sissakian, JINR Vice-Director M. Itkis, JINR Chief Engineer G. Shirkov, JINR Assistant Director on Economic and Financial Issues V. Katrasev, Deputy Chief Scientific Secretary of JINR D. Kamanin, Leader of the Polish Group at JINR W. Chmielowski.

M. Waligórski handed to A. Sissakian an official letter of the Ministry of Foreign Affairs of Poland on his appointment Plenipotentiary of the Government of the Republic of Poland to JINR. M. Waligórski works at the Institute for Nuclear Research in Cracow; his professional interests are radiobiology and hadron therapy of oncological diseases.

Having congratulated M. Waligórski on the new appointment, A. Sissakian acquainted the guests with history of the establishment, development and the modern status of JINR. In particular, he spoke about the contri-

bution of famous Polish scientists into the development of the Institute — M. Danysz, H. Niewodniczanski, L. Infeld, A. Hryniewicz, who had been Plenipotentiary of the Polish Government to JINR for many years, and other Polish researchers.

A delegation from the Institute of Modern Physics (IMP, Lanzhou, China) headed by IMP Director Professor Xiao Guoqing visited JINR **on 15–18 July**. On 16 July the guests were received at the JINR Directorate where they were informed about the present activities at JINR, the Institute plans, the development of new facilities and scheduled experiments, leading projects of the Dubna scientists in the synthesis of transuranium elements, wide international cooperation, educational and innovation activities at JINR and the establishment of the Special Economic Zone «Dubna».

The head of the Chinese delegation Xiao Guoqing marked that good relations between JINR and China maintained since the 1950s lay the basis for their visit; he also stressed that JINR is one of the best known scientific centres in nuclear physics and particle physics. He expressed his hope that their visit would promote further bilateral relations between JINR and the Institute of Modern Physics.

A document was signed at the meeting in the Directorate that reflected the mutual interest of both sides in cooperation in the following trends: the NICA project at JINR, heavy-ion physics, physics and chemistry of superheavy elements, nanophysics, accelerator physics and technology, and the development of innovation activities and modern educational programmes.

On 30 July, a working meeting between CERN Director-General Professor R.-D. Heuer and JINR Director Academician A. Sissakian was held in Geneva. Leader of the JINR group at CERN V. Karzhavin took part in the meeting. R.-D. Heuer and A. Sissakian discussed issues of cooperation in the experiments at the Large Hadron Collider, DIRAC and other programmes of mutual interest, including educational projects. They also talked about the aspects of the presentation on the European level of advanced Dubna projects that are included into the JINR seven-year programme for 2010–2016, preparation of the meeting of the joint JINR–CERN cooperation board to be held in October in Dubna, the discussion of the NICA project (heavy-ion physics at high energies), and other issues of cooperation between two largest world scientific centres. During his stay in Geneva, A. Sissakian had a number of other working meetings.

Science and Technology Adviser of the Embassy of India in RF Sandjeev Kumar Varshney visited JINR **on 3 August**. The aim of his visit was the preparatory activities in view of the 16th meeting of the Joint Council of the Comprehensive Long-Term Programme of Scientific-Technical Cooperation for 2000–2010 of the governments of Russia and India. V. Kadyshevsky, N. Russakovich, I. Adam, M. Altaisky, A. Vasiliev met

the guest at the JINR Directorate. After the talks Sandjeev Kumar Varshney visited the Flerov Laboratory of Nuclear Reactions.

A delegation of Indian scientists headed by Professor V. Sahni visited JINR **on 11 September**. It included Physics Director of the Bhabha Centre of Atomic Research (Mumbai) S. Kailash, Director of the Interuniversity Accelerator Centre (New Delhi) A. Roy, Councilor of the Science and Technology Department B. Jain, staff scientist of the department R. Kumar. JINR Director spoke to the guests about the basic facilities of the Institute, their upgrading and new projects, innovation and educational programmes. JINR Scientific Leader V. Kadyshevsky, Chief Scientific Secretary N. Russakovich, Acting Director of the UC S. Pakuliak, scientists involved in joint projects M. Frontasyeva, V. Aleinikov, S. Kulikov, M. Altaisky took part in the meeting.

Scientific cooperation between JINR and India has traditionally developed in mathematics and nuclear physics involving new trends today. At present, 12 research centres and universities of nine Indian cities are active partners of JINR.

The Indian delegation visited VBLHEP, FLNR, LIT and Dubna University.

CERN Director-General R.-D. Heuer and Research and Computer Technology Director Doctor S. Bertolucci visited JINR **on 10–11 October**. They took part in a meeting on 10 October where the status of the Nuclotron-M and the NICA/MPD projects was discussed, as well as R&D of the Nuclotron upgrading at the JINR Laboratory of High Energy Physics.

On 11 October, a meeting of the JINR–CERN Cooperation Committee was held at the JINR International Conference Hall. It was co-chaired by the Directors of the two international scientific centres — RAS Academician A. Sissakian and Professor R.-D. Heuer.

In his report, Professor R.-D. Heuer spoke about the new unique instrument for scientific research — the Large Hadron Collider and its significance for future CERN programmes. He also gave a detailed review of the repair work at the LHC after the accident. JINR Vice-Director Professor R. Lednický made a report on the JINR seven-year programme in particle physics. JINR Chief Engineer RAS Corresponding Member G. Shirkov acquainted the guests with elaborations in accelerator science produced at the Institute. The sides discussed in detail the status of the NICA, DIRAC and NA61 projects. The main items of further discussions were issues of the development of JINR–CERN future cooperation and the signing of the bilateral Agreement on JINR involvement in CERN projects and CERN participation in the NICA project after its adoption by the JINR Committee of Plenipotentiaries.

A delegation from Mongolia visited the Joint Institute for Nuclear Research **on 16 October**. It included Counselor-Envoy of Mongolia in RF

G. Lundehm, First Secretary of the Mongolian Embassy in RF Sh. Ehnkhtur, Second Secretary of the Embassy N. Chimehg. JINR Vice-Directors M. Itkis, R. Lednický, JINR Chief Scientific Secretary N. Russakovich, LRB Director E. Krasavin received the delegation. D. Kamanin, M. Loshchilov, Head of the Mongolian group at JINR Ch. Ochbadrakh, FLNP Deputy Director D. Sangaa took part in the meeting. N. Russakovich made a general review about the Institute, M. Itkis spoke about historical ties of Mongolian scientists with Dubna and the development of cooperation today. After the meeting at the Directorate the delegation visited FLNR, LRB, Research and Production Centre «Aspekt».

On 6 November, a meeting of the Committee on cooperation between the National Institute of Nucleus and Particle Physics of France (IN2P3) and JINR was held in Paris. The French side was represented by IN2P3 Director M. Spiro, his Deputy S. Galès and International Cooperation Coordinator at IN2P3 E. Perret. JINR Director A. Sissakian, JINR Vice-Director M. Itkis and Chief Scientific Secretary N. Russakovich represented the Joint Institute for Nuclear Research.

The participants of the meeting discussed urgent issues of financing scientific research in the conditions of economic recession, the status of priority projects implemented in France and JINR, the concept of the seven-year programme of JINR development, and prospects for further development of France–JINR and JINR–CERN cooperation. The process of implementation of 23 joint projects was considered at the meeting as the financing of them is provided by both sides; the amount of support of the international cooperation in these projects in 2010 was defined.

A delegation of members of the Scientific Advisory Committee of the International Scientific Technical Centre visited JINR **on 17 November**. JINR Vice-Director R. Lednický, Chief Scientific Secretary N. Russakovich, D. Kamanin, G. Trubnikov received the guests. N. Russakovich made a presentation on JINR activities.

Speaking about the results of the ISTC–JINR cooperation, ISTC Deputy Executive Director W. Gudowski gave a general overlook of ISTC activities: support of projects, holding conferences, schools and seminars. He marked that cooperation with JINR is conducted in 33 projects with the total financing of more than 4 million dollars. These are the involvement in future experiments at the LHC, the SAD subcritical assembling, and many others.

The guests were acquainted with the JINR core projects — NICA (R. Lednický), the FLNR cyclotron complex development (A. Popeko), and upgrading of the IBR-2 reactor (A. Belushkin). They also had excursions to FLNR, FLNP and VBLHEP.

A quadruple agreement on the joint training of Bachelors and Masters in nuclear physics was signed **on 19 November** in the frames of the visiting session of the JINR Committee of Plenipotentiaries in Astana (Kazakhstan). It was signed by Rector of the Gumilev Eurasian National University B. Abdraimov, Rector of the International University of Nature, Society and Man «Dubna» D. Fursaev, JINR Director Academician A. Sissakian and Director of the National Nuclear Centre of the Republic of Kazakhstan Academician K. Kadyrzhanov.

The agreement will provide students of the Gumilev Eurasian National University (ENU) with an opportunity to have training at the chair of nuclear physics of the «Dubna» University and use the experimental base of the Flerov Laboratory of Nuclear Reactions for the preparation of their Master theses. Students from Dubna will be able to have their predegree practice at the DC-60 heavy-ion accelerator in Astana and defend their theses at ENU.

The signing of the agreement on training nuclear physicists is in the tideway of the State Programme of the Republic of Kazakhstan in the development of atomic industry that makes provision for the development of fundamental and applied science in Kazakhstan in this field, as well as the national atomic energy and the construction of several atomic power stations.

Dubna is regarded as an important partner that takes part in various projects of this programme. JINR has played a key role in the establishment of the Interdisciplinary Scientific Research Complex on the basis of the DC-60 heavy-ion accelerator in Astana. At present, a new project is worked out to develop an accelerator DC-350 in Almaty for the synthesis of superheavy elements. In June 2007, an international educational consortium was established for the training of specialists in nuclear technology. It included JINR, the National Nuclear Centre of RK, the Institute of Nuclear Physics (Almaty, RK) and ENU named after L. Gumilev. In July 2008, an International Chair of Nuclear Physics, New Materials and Technologies was opened in ENU. The educational programmes of the lectures and laboratory classes, programmes of practice at the chair were brought into line with the educational schedule of the Nuclear Physics Chair of the «Dubna» University.

The following persons took part in the ceremony of signing the agreement: RF Deputy Minister of Education and Science A. Khlunov, RK Vice-Minister of Education and Science E. Ongarbaev, Plenipotentiaries of Governments of JINR Member States, JINR UC Director S. Pakuliak, Head of the ENU International Chair of Nuclear Physics, New Materials and Technologies K. Baktybekov.

The second meeting of the working group on the work-out of the draft Interstate Purposeful Programme of Innovation Cooperation of CIS countries for the period up to 2020 was held **on 24 November** at the JINR

International Conference Hall. The working group includes representatives of the executive power bodies of CIS countries responsible for innovation development (Armenia, Belarus, Moldova, the Russian Federation, Ukraine) and the CIS Executive Board. JINR Director A. Sissakian, Deputy Director on Innovation Development A. Ruzaev, representatives of the RF Federal Agency on CIS Affairs, compatriots living abroad and International Humanitarian Cooperation («Rossotrudnichestvo»), Deputy Director on Science of the Institute of World Economy and Business of the Russian University of People's Friendship A. Chursin took part in the meeting.

Deputy Chairman of the CIS Executive Board E. Novozhilov opened the meeting. He marked that the working group had a serious task to prepare a purposeful programme of the innovation development for the economies of all CIS countries to transfer to the innovation-based development. He also reminded the participants that the year 2010 is declared the year of science and innovations at CIS countries.

Greeting the audience, A. Sissakian marked that the Joint Institute had been serving the aim to establish the integrated innovation space for its Member States for all those years when the expression «innovation» had not been even used. He told the participants of the meeting about JINR activities stressing the cooperation with CIS countries and said that public relations campaigns, organization of conferences should not be the only methods to achieve success in the innovative process; large projects are important, and Dubna is a very good platform for them with its unique scientific infrastructure. JINR Director also acquainted the audience with the stages of the project development of the International Innovation Centre for Nanotechnology of CIS countries.

Other issues discussed at the meeting were organizational questions, reasons for poor implementation of the protocol from the first meeting of the working group in Kiev (only three items fulfilled out of seven) and the structure draft of the Interstate Purposeful Programme.

First Deputy Chairman of the RF Federation Council A. Torshin visited Dubna **on 28 November**, accompanied by Adviser to Chairman of the RF Accounts Chamber pilot-cosmonaut Yu. Baturin and Adviser to the Rosnauka Leader K. Pavlov. JINR Director Academician A. Sissakian, JINR Vice-Director M. Itkis, VBLHEP Director V. Kekelidze, the city Mayor V. Prokh received the guests at the JINR Directorate.

A. Sissakian spoke about the history of the Institute, the main trends of its activities, core projects, with NICA as the most ambitious, prospects for JINR development in the frames of the seven-year plan and the resolutions of the governing body of the Institute — the Committee of Plenipotentiaries of the Governments of the JINR Member States whose session was held on 19–21 November in the capital of Kazakhstan Astana.

A. Torshin informed the participants of the meeting about the resolutions of the 36th session of the Parliament Assembly of the Union State Russia–Belarus which was held on 26 November at the RF State Duma, where the draft of the state programme of the Union State «Centre of Fundamental Research and Innovation Projects on the Basis of the Accelerator Complex NICA of the Joint Institute for Nuclear Research» was adopted. This programme is aimed at a large-scale involvement of Russian and Belorussian organizations into the NICA/MPD project for its efficient and speedy implementation. The Parliament Assembly addressed in its resolution the Council of Ministers of the Union State with a request to discuss the project of the NICA programme and recommended that the Ministry of Education and the «Rosnauka» Federal Agency accelerate the process of this programme preparation.

During the discussion of some issues concerning science cities President of the Science Cities' Union A. Sissakian suggested that one of the meetings be held on the topic of Dubna as a science city. On the whole, measures to solve the discussed issues and plans for further cooperation of the Institute and the city representatives with members of the Parliament were worked out. A press conference with the Dubna mass media was held.

The guests were shown the Nuclotron and the hall for the remote access to LHC experiments at the Veksler and Baldin Laboratory of High Energy Physics. The following projects were presented to them: NICA/MPD and the accompanying programme of the Union State Russia–Belarus; an educational programme; innovation projects of FLNR; a presentation on the grid-network.

On 3 December, JINR Director Academician A. Sissakian received Acting Director-General of the Federal State Unitary Enterprise «Space Communication» Yu. Prokhorov. JINR Vice-Director M. Itkis, JINR Assistant Director V. Katrasev, FLNR Director S. Dmitriev, LIT Deputy Director V. Korenkov, and Director of the Space Communication Centre «Dubna» A. Duka took part in the meeting.

JINR and the Federal State Unitary Enterprise «Space Communication» have been successfully cooperating for many years in the implementation of projects in network and telecommunication development. New innovation projects and trends for mutually profitable cooperation were discussed at the meeting.

On 8 December, a delegation of scientists from the Centre of Research in International Public Policy (Japan) visited JINR. It was headed by the Centre President N. Tanaka, a famous Japanese economist and publicist, for many years an Adviser to the Japanese Government in various economic reforms.

JINR Vice-Directors M. Itkis, R. Lednický, Assistant Director G. Arzumanyan, Deputy Chief Scientific Secretary D. Kamanin, Deputy Head of the Administration on Staff and Innovation Development N. Lenskaya

received the delegation. M. Itkis acquainted the guests with the main trends of research, basic facilities and new projects at JINR, its cooperation with research centres and universities of Japan, innovation elaborations at the SEZ «Dubna». The guests had an excursion to the Flerov Laboratory of Nuclear Reactions and the Special Economic Zone.

RF Minister of Economic Development Eh. Nabiullina visited JINR **on 9 December**. With great interest, the Minister got acquainted with the operation of the superconducting accelerator of relativistic nuclei and heavy-ions Nuclotron and techniques applied at this facility. JINR Director Academician A. Sissakian told Eh. Nabiullina about the Nuclotron upgrading rigorously developed in the frames of the NICA/MPD project, applied research, the draft of the Union State programme, grid-technologies, and educational programmes. The Minister expressed her approval of the strategic programme of the JINR development.

The constitutive forum «International Innovation Centre for Nanotechnology of CIS Countries (IICNT CIS): Status and Prospects» was held **on 17–18 December** in Dubna. It was organized by the Joint Institute for Nuclear Research together with the RRC «Kurchatov Institute», the International Association of Academies of Sciences (IAAS) under the support of the Interstate Foundation of Humanitarian Cooperation of CIS Countries (IFHC).

IICNT CIS is established in Dubna as a centre whose activities are aimed at the development of an internationally competitive high-technology market of nanoindustry in CIS countries. It is to become an instrument of integration of innovation, research and educational space of the Commonwealth of Independent States.

Representatives of ministries, national Academies of Sciences, chambers of commerce and industry, scientific and educational centres, state and private companies in high technology from 8 CIS countries took part in the forum. A general meeting of the IICNT CIS founders was held in the frames of the forum, constitutive documents were signed and governing bodies elected. Excursions to JINR laboratories, visits to the Dubna SEZ and exhibitions of innovation projects of companies-residents were organized for the forum guests.

On 18–19 December, an Italy–Russia round-table discussion «Efforts in Fundamental Research and Perspectives for Applied S&T and Business Development» was held in Dubna. It was organized by the Italian Embassy in RF and JINR. Famous scientists and specialists who work in fundamental research as well as in high technology and applied science took part in it. In particular, Minister-Counsellor of the Italian Embassy in Russia Extraordinary and Plenipotentiary G. Iannuzzi, Scientific Counsellor of the Italian Embassy Professor P. Frè, Director of Frascati National Laboratories

Professor M. Calvetti, President of the IV Commission (Theoretical) of the Italian National Institute of Nuclear Physics (INFN) Professor G. Martinelli, President of the Padova INFN Section Professor A. Masiero arrived in Dubna. Science Counsellor of the delegation of the European Union to Russia R. Burger also took part in the round-table meeting.

The report made by JINR Director Academician A. Sissakian who opened the round-table discussion was devoted to the rich experience in cooperation of Italy, Russia and JINR, prospects for its development, and new projects at JINR where joint efforts can be very effective.

Academician-Secretary of the RAS Department of Physics Sciences V. Matveev handed the Diploma of Honorary Doctor of RAS to the Italian scientist

P. Spillantini for his contribution to science and development of Russian–Italian cooperation.

The orbit of scientific reports and presentations overlapped urgent problems in physics, results of joint research projects at JINR, INFN, and CERN, plans for the development of basic facilities of the Joint Institute and grid-technology, application of physics knowledge in biology and medicine. On 18 December, the participants of the round-table discussion visited the Veksler and Baldin Laboratory of High Energy Physics where they were acquainted with the NICA collider development.

The round-table discussions analyzed scientific ties among Russia, Dubna and Italy, and considered further practical steps to strengthen these ties. A concluding memorandum was adopted.

CONFERENCES AND MEETINGS HELD BY JINR

Ten conferences were the largest among scientific conferences and workshops held at JINR in 2009.

On 20–21 January, in the frames of the jubilee events dedicated to the 175th anniversary of the birth of Dmitri Ivanovich Mendeleev, the international scientific symposium «*Mendeleev Periodic Table. The New Superheavy Elements*» was held in Dubna organized by the Flerov Laboratory of Nuclear Reactions. More than 100 scientists from Russia, Germany, Italy, China, Poland, the USA, France, Switzerland, Japan, and JINR took part in the symposium.

This jubilee was a good occasion for the whole chemistry community and, in particular, for physicists and chemists who study the synthesis and new elements, to summarize the results and discuss plans for future research at leading world laboratories, such as FLNR (Dubna), GSI (Darmstadt, Germany), LLNL (Livermore, USA), GANIL (Caen, France), RIKEN (Wako, Japan), PSI (Willigen, Switzerland), LMU (Munich, Germany), IMP (Lanzhou, China), JAERI (Takasaki, Japan).

Summing up the discussions at the symposium on various directions of research, it can be concluded that the limit of the Mendeleev table has not been achieved yet. The question how many elements could fill in the table boxes is still open. Nevertheless, the fundamental understanding of the chemical periodicity is a powerful instrument for chemists. Physicists consider their contribution to the development of the periodic system one of the main tasks of their scientific work.

On 16–21 February, the annual *XIII Scientific Conference «AYSS-2009»* was held at the Laboratory of Information Technologies. It was organized by the JINR Association of Young Scientists and Specialists. More than 120 young scientists and specialists of JINR, stu-

dents and postgraduates from the JINR UC and other higher education institutions sent their applications to take part in the conference. Over 80 participants made reports on their research at eight sections of the conference.

The new frame of the conference — section meetings only — allowed an increase of the number of presentations and became the first step in the programme «JINR Young Staff Members» for 2010–2016 in a new format elaborated by the AYSS core group headed by the JINR Directorate board on youth. Properly speaking, this programme is a supplement to the seven-year plan of the JINR scientific development; it is aimed at the establishment of the promotion system for young scientists and specialists and, by all means, younger personnel. The reason for the new changes is in the tasks to search for promising talented young scientists who are able to continue scientific research at JINR in the nearest future. The traditional contest of scientific papers had the same purpose; its 12 winners were awarded gifts of money.

In future, the AYSS council plans to increase the number of participants of the winter conference to maximally attract young scientists and specialists of the Institute, as today the conference participants are only 15% of the total number of JINR young staff members.

The International Workshop in Memory of Svetlana Petrovna Ivanova was held on 21 February 2009. Her friends, colleagues, pupils and relatives gathered in the conference hall of the Bogoliubov Laboratory of Theoretical Physics to make reports and share their memories. Among them were V. V. Voronov, R. V. Jolos, Y. N. Kopach, Y. L. Kuznetsov, O. V. Fotina, W. Chmielowski.

Svetlana Ivanova put great effort into the realization of the idea of creating the University Centre, and in 1991, when it was established as a JINR department, became its first Director. Due to her initiatives, a lot of Member States (Poland, the Czech Republic, Slovakia, Romania) were involved in the participation in the JINR educational programme. She initiated, inspired and encouraged lots of important things, among which the creation of the UC logistical base, the opening of postgraduate course in JINR, the organization of students' summer practice sessions in JINR fields of research, international schools «Nuclear Physics Methods and Accelerators in Biology and Medicine», and visits of schoolchildren from the Member States.

Svetlana Ivanova made a great contribution into the foundation of the International University of Nature, Society and Man «Dubna», where she was the Head of the International Department and the Department of Postgraduate Studies.

The 17th International Seminar on Interaction of Neutrons with Nuclei (ISINN-17) was organized by the Frank Laboratory of Neutron Physics (FLNP) of the Joint Institute for Nuclear Research (Dubna, Russia) on 27–30 May. The Seminar continues the tradition of the FLNP annual seminars devoted to the fundamental and applied aspects of the neutron nuclear physics.

Traditional topics were presented during sessions on fundamental properties of the neutron and violation of the fundamental symmetries in neutron-induced reactions; nuclear data and structure of the highly excited nuclear states; nuclear fission and methodical aspects.

More than 100 scientists from 13 countries attended ISINN-17, representing leading neutron centers of Bulgaria, China, the Czech Republic, France, Germany, the Republic of Korea, Romania, the Slovak Republic, the Republic of South Africa, Sweden, Switzerland, and the USA.

Different aspects of nuclear fission were discussed during the first day of the seminar. Several experimental reports were devoted to the experiments on ternary fission during the morning session and theoretical ones were presented during evening sessions giving rise to the extensive discussions between participants.

At the parallel session on nuclear analytical method in life sciences different experiments on application of neutron activation analysis and other analytical methods for air pollution studies, elemental concentrations in food staff, industrial environment, etc. were reported.

The second day of the seminar had begun with the report on physical startup of the new FLNP source of resonance neutrons — IREN facility. Different methodical and applied aspects of the neutron physics were also discussed including a bright invited talk given by Prof. J. Masarik from Comenius University in Bratislava «Utilization of Neutrons and Gamma Rays for Extraterrestrial Objects Elemental Composition Investigation». During the rest of the second day, several reports on

nuclear data measurements treating and evaluation were presented.

During the third day of the seminar, reports on neutron-induced reactions with emission of the charged particles were presented at the first morning session establishing bridge between micro and macro physics — such reactions play vital role in the processes of stellar nucleosynthesis. At the second morning session, theoretical aspects of the fundamental symmetries violation in neutron–nuclei and neutron–nonstationary magnetic field interactions were discussed. Third morning session was devoted to the experimental studies and theoretical models of the excited nuclear states.

During the last day, several bright new results obtained with ultracold neutrons (UCN) were reported by V. Nesvizhevsky from ILL; M. Daum from PSI and E. Gutmiedl from TU Munich gave information on the status of PSI solid deuterium UCN source and some new results on UCN production in solid deuterium, respectively; Sharon Stephenson from Gettysburg College (USA) reported on the status of the first direct experiment on measurement of the neutron–neutron scattering length.

As usual the traditional barbecue picnic on the bank of the Dubna River was an essential part of informal programme of the seminar.

The European School on High-Energy Physics was held on 14–27 June in Bautzen (Germany). It was jointly organized by CERN and JINR. Lecture courses on modern problems in high-energy physics were given at the school. Among the lecturers was Professor of the N. N. Bogoliubov Institute of Theoretical Physics of NAS of Ukraine, member of the JINR Scientific Council G. Zinoviev («Heavy-Ion Physics»); young JINR staff members M. Savina and D. Naumov were discussion leaders.

CERN Director-General Professor R.-D. Heuer and JINR Director RAS Academician A. Sissakian made reports on scientific programmes of CERN and JINR. The leaders of the two centres had a meeting where they discussed cooperation issues.

The traditional International Conference «*Nuclear Structure and Related Topics*» (NSRT'09), which is a successor of the conferences and schools on selected topics in nuclear structure organized by Prof. V. G. Soloviev in the 1960s–1980s, was held at the Bogoliubov Laboratory of Theoretical Physics from 30 June to 4 July, 2009. The Conference is organized every three years and the latest was the fifth one.

The Conference programme was closely correlated with the current studies in the field of low-energy nuclear physics at JINR. It contained equally experimental and theoretical talks. The main Conference subject was physics of nuclei far from the stability valley.

Most of the theoretical talks dealt with the contemporary versions of the nuclear shell model, the relativistic many-body description of low-energy nuclear

dynamics and the energy density functional formalism. A common feature of these approaches is the desire to elaborate the «universal» parameters of the effective intranuclear interactions which will allow one to predict with reasonable accuracy characteristics of nuclides that cannot be studied experimentally due to extremely short lifetimes.

The special Conference session was devoted to the spectroscopy of very heavy nuclei. Experimentalists and theoreticians discussed new data on low-lying states and isomers in these nuclei with the aim to extract information about the nuclear shells near the Fermi level and thus to conclude on the value of the next after 82 magic proton number.

Several talks dealt with the structure and reactions of light exotic nuclei. Specifically, there were discussed experiments to reveal the Bose condensate of alpha particles existing in some light nuclei if the corresponding theoretical predictions are right. Moreover, a new theoretical approach to analyze break-up, transfer and fusion reactions going beyond the mean-field approximation was presented.

Interesting experimental and theoretical results on the properties of monopole, as well as pygmy dipole resonances were reported. These resonances play an important role in some astrophysical processes.

Among other problems in the field of «nuclear astrophysics», the theory of weak interaction mediated reactions with hot nuclei, which are of the key importance for a quantitative description of a supernovae collapse, and the role of photonuclear reactions in the synthesis of rare neutron-deficient nuclides were discussed.

130 nuclear scientists from 23 countries of Europe, Asia, America and Africa took part in NSRT'09. More than 40 participants came to Dubna from Russia and other JINR Member States. Strong contributions to the Conference programme were made by German, French, Japanese and Chinese physicists. It was for the first time when scientists from India and South Africa gave their talks at the NSRT Conference. The Conference was supported by the Russian Foundation for Basic Research, the Heisenberg–Landau and the Votruba–Blokhintsev Programmes. The total number of the presented oral talks was 63 and the posters — 20. A distinctive feature of the Conference was a high number of young reporters who gave about one third of the total number of talks.

On 7–11 July, the JINR Laboratory of Information Technologies hosted the International Conference «*Mathematical Modeling and Computational Physics 2009*» (MMCP'2009). The Chairmen of the Conference were JINR Director Academician of the Russian Academy of Sciences A. N. Sissakian and LIT Director Professor V. V. Ivanov.

Specialized sections were organized in the frames of MMCP'2009 which covered the research fields related to two traditional workshops organized in Dubna ear-

lier: «Computer Algebra» and «Quantum Physics and Information».

251 scientists from 23 countries took part in the event, including 62 professors, 110 doctors and candidates of science, 79 students and postgraduates. Russia was presented by attendants from 50 universities and research institutes.

The Conference programme comprised plenary reports, sectional presentations and a poster session. In total, 200 reports were made at the conference.

A status plenary report delivered by Corresponding Member of RAS B. N. Chetverushkin «High-Performance Computing: Fundamental Problems and Solutions» stressed that the use of modern computer facilities demands a radical changeover of methods and approaches to solve problems. Similar questions were considered in the report «Enabling Science through Emerging HPC Technologies» delivered by the Editor-in-Chief of the journal «Computer Physics Communications» (CPC) and the Director of the CPC Program Library Professor N. S. Scott (Belfast, Great Britain). The development of Grid-technologies in Russia and at JINR was reviewed in the plenary report presented by LIT Deputy Director V. V. Korenkov.

Plenary presentations covered a number of questions related to general theoretical and computational aspects of the quantum mechanical description of multiparticle systems. A brilliant report presented by Professor T. A. Shushkevich (V. Keldysh Institute of Applied Programming, Moscow) about mathematical simulations of the large-scale problems at the beginning of the Soviet space age and in the present-day space studies should be especially noted. Particular attention was paid to computer algebra methods. On the whole, 33 plenary reports were delivered.

The Conference comprised seven sections. The greatest number of reports was presented within the direction «Mathematical Modelling and Computational Physics» in the frames of which five sections were organized. The presented reports discussed new methods of mathematical simulation and analysis of data in various areas of knowledge: physics, biology, biophysics and bioinformatics, nanotechnology, economy, etc. Presented were algorithms and software complexes applied for simulation and analysis of complex systems.

The section «Computer Algebra Software, Symbolic-Numeric Methods and Algorithms» represented two basic directions, namely, the development of methods, algorithms and software systems of computer algebra and its applications.

A particular section dealt with the issues of modelling in biophysics, bioinformatics and physical chemistry. The research work on the magnetic nanostructures and their application to the cancer treatment should be specially noted.

In total, 126 sectional reports were presented at the Conference.

The International N. Bogoliubov Conference «*Problems of Theoretical and Mathematical Physics*» was one of the major events in the celebration of the centenary of the birth of the great Russian scientist N. N. Bogoliubov (21.08.1909–13.02.1992) in the Russian Federation. It was held on 21–27 August 2009 in Moscow at the Russian Academy of Sciences (RAS) and in Dubna at the Joint Institute for Nuclear Research (JINR). Order Num. 1751 of the President of the Russian Federation D. Medvedev of 9 December 2008 «On the Celebration of the Centenary of the Birth of N. N. Bogoliubov» marked the significance of the festive events.

The Bogoliubov Conference is traditionally held once in five years in the Russian Federation. The conference'2009 was organized by the Russian Academy of Sciences, the Joint Institute for Nuclear Research and the Moscow Lomonosov State University. It was also sponsored by the Russian Foundation for Basic Research, the RF Federal Agency on Science and Innovations, the Foundation «Dinasty», the JINR joint Heisenberg–Landau, Votruba–Blokhintsev and Bogoliubov–Infeld scientific programmes.

A large photo exhibition was arranged for the conference participants in Moscow and Dubna. It demonstrated different periods of life and scientific career of Academician N. Bogoliubov. A presentation was held of the 12-volume Collection of scientific works by the scientist that was published in the RAS press «Nauka» in 2005–2009; new publications were also displayed: a booklet about N. Bogoliubov that contained the complete bibliographic reference list of scientific papers by N. Bogoliubov, a series of special topical brochures where the authors — Academicians A. Tavkhelidze, D. Shirkov, V. Matveev, A. Sissakian, Professor A. Sukhanov — shared their recollections about the Teacher — Academician N. Bogoliubov; an exhibition of papers and books by N. Bogoliubov, as well as books about him, was organized at the JINR Library.

On 21 August, mathematicians, specialists in mechanics and physicists-theoreticians from more than 30 countries of the world gathered at the RAS President Hall. Among them there were scientists of the older generation who are pupils and colleagues of Academician N. Bogoliubov, as well as young people who have just started their career in mathematics and theoretical physics. More than 160 reports were presented at the conference; they dealt with modern problems in mathematics and nonlinear mechanics, quantum field theory and elementary particle theory, statistical physics and kinetics — exactly those fields of science that make a decisive contribution to modern mathematics and physics both internationally and in scientific centres and universities of Russia and abroad. About 300 physicists and mathematicians represented leading scientific centres, including Russian institutions and universities, such as the RAS Steklov Institute of Mathe-

matics, the RAS Lebedev Institute of Physics, ITEP, the RAS St. Petersburg Institute for Nuclear Physics, INP SD RAS, IHEP, JINR, the Lomonosov MSU, Novosibirsk, Tomsk, Samara, Saratov State Universities, and other organizations.

Opening the Conference, RAS Vice-President Academician V. Kozlov addressed the participants with the words of greeting. The first day of the conference included the following plenary reports: by Academician V. Kozlov (Russia) on the nonequilibrium statistical mechanics; by Academician S. Novikov (Russia) on new approaches in the complex analysis; by Academician V. Matveev (Russia) on new physics search at the Large Hadron Collider; by M. Shaposhnikov (Switzerland) on problems in modern cosmology; by A. Radyushkin (the USA and JINR) on pion physics and their form factors study.

The participants of the conference paid the tribute to the memory of N. Bogoliubov: they visited the tomb of the great scientist at the Novodevichie cemetery and laid flowers. The first day of the conference finished with the demonstration of a new documentary about Academician N. Bogoliubov produced at the studio «Nauka Video», RAS.

The following plenary reports were made on the second day of the conference: by Academician V. Vladimirov (Russia) on the model representation of string and superstring amplitudes in one class of quadratic fields; by I. Molotkov (Russia) on mathematical modeling of processes in a reactor; by A. Naishtadt (Russia) on generation of resonances in charged particle dynamics; by RAS Corresponding Member I. Volovich (Russia) on the problem of time noninvertibility and the Bogoliubov hierarchy; by Academician Ya. Sinay (Russia and the USA) on the Fourier mode decay in solutions of the Navier–Stokes system; by RAS Corresponding Member L. Lipatov (Russia) on the scattering amplitudes in the $N = 4$ supersymmetry.

From 24 to 27 August, the Bogoliubov Conference continued its work in Dubna, at the Laboratory of Theoretical Physics which is named after N. Bogoliubov. The Dubna session started with a review report by JINR Director Academician A. Sissakian. He spoke about N. Bogoliubov — Teacher and Master. A memorial plaque for N. Bogoliubov was opened after the report on the Laboratory building wall. The plenary sessions commenced with the awarding ceremony of the N. Bogoliubov JINR Prize for the years 2006–2008: it was presented to Academician D. Shirkov, one of the closest disciples of N. Bogoliubov's, for an outstanding contribution to theoretical physics, in particular, for the development of new methods in quantum field theory. Academician B. Paton, President of the National Academy of Sciences of Ukraine, was the second winner of the Bogoliubov Prize for 2006–2008. He was awarded the Prize for an outstanding contribution to science and the development of international cooperation.

These are the following review reports presented in the Dubna part of the conference: H. Araki (Japan) on dynamics and potentials; Eh. Boos (Moscow, Russia) on physics at the Large Hadron Collider; D. Kazakov (JINR) on new trends in quantum field theory; N. Slavnov (Moscow, Russia) on correlation functions for massless quantum integrable models; K. Jansen (Germany) on the search for solutions of the quantum chromodynamics problems in case of light quarks; Academician L. Faddeev (St. Petersburg, Russia) on new variables for the Einstein gravitation theory; Academician L. Pitaevsky (Moscow, Russia) on experimental verification of the Bogoliubov theory for the weak Bose-gas; K. Chetyrkin (Germany) on prospects in multiloop renormalization-group calculations; S. Frolov (Ireland) on theory on the quantum strings basis; W. Götze (Germany) on the Glassy relaxation theory; Academician V. Baryakhtar (Ukraine) on the contribution by N. Bogoliubov to the development of physical kinetics; Academician Yu. Oganessian (JINR) on restrictions in atomic nuclei existence; M. Stoitsov (USA) on the functional theory of nuclear density; I. Arefiev (Moscow, Russia) on the catalysis of the «black holes» appearance at the Large Hadron Collider; A. Smirnov (Italy) on neutrino physics and astrophysics; V. Zakharov (Moscow, Russia) on duality and nonperturbative physics in quantum chromodynamics; R. Faustov (Moscow, Russia) on low-energy properties of hadrons; V. Zagrebnov (France) on the Bogoliubov theory of boson systems with external potentials; V. Voronov (JINR) on pair correlations and the Hartree–Fock–Bogoliubov theory of nuclear structure; A. Sorin (JINR) on the NICA project and prospects of research in heavy-ion collisions physics at JINR.

The section meetings were held on separate scientific topics and trends which were decisively contributed by N. Bogoliubov in different periods of his creative activities and are, at the same time, the basis of modern fundamental mathematics, mechanics and theoretical physics. In the frames of the section «Mathematics and Nonlinear Mechanics» (23 reports), for example, issues of the Cauchy nonlinear problem and semigroup evolution were widely discussed; spectral subspace rotation; nonlinear dynamics of molecular chain rotation; three-body problem with a preassigned curve; nonlinear and nonlocal string dynamics, etc.

The section «Quantum Field Theory and Elementary Particle Theory» (54 reports) discussed in detail modern problems of confinement and deconfinement in the theory of strong interactions at finite temperature; spin structures of fundamental particles; aspects of spontaneous symmetry violation in the theory of electroweak interaction and models that allow clearer understanding of the properties of the fundamental Higgs boson — one of the main elements in the modern conceptualization of the structure of matter; models of supersymmetric extension of the standard idea on the interaction of fundamental fields, etc. Two reports were presented for the

first time in the cycle of the N. Bogoliubov Conferences that dealt with issues of a new trend in quantum field theory — the studies of the problem of the so-called «nonparticles» array demonstration where these non-particles have a continuously distributed mass in phase space determined by the conformal invariance.

The main topics at the section «Statistical Mechanics, Kinetics and Quantum Theory of Condensed State of Matter» (44 reports) included issues of dynamics of equilibrium and nonequilibrium state of condensed matter; Bose-gas interaction in continuous space; studies of correlation functions and thermodynamic values for mixed systems, in the frames of the exactly solvable models; development of the high-temperature superconductivity theory and models with thermodynamic potentials, etc.

The section «Nuclear Physics» (14 reports) discussed the main aspects of quantum theory of scattering; symmetry violation in Fermi systems and the origin of quantum dots; Bogoliubov transformations in nuclear matter theory; equation solutions for many-body problems; dynamic symmetry in nuclear structure, etc.

The Bogoliubov Conference was successfully concluded on 27 August in Dubna. The decision of the jury was announced at the final meeting on the Prize awarding for the best report in mathematics and physics among young scientists (up to 35 years old) — the participants of the conference. The laureates of the Prize for the best report in physics were: V. Katkov (JINR) for the report «Peculiarities of Field Emission for Carbon Nanosheets» and A. Bagrov (RAS Institute of Mathematics) for the report «Critical Formation of Covered Surfaces in Collisions of Nonextending Shock Gravitational Waves in the de Sitter Space»; in mathematics: A. Pechen (Princeton University, USA) for the report «Dynamics and Control of Open Quantum Systems». The laureate of the Bogoliubov Prize 2006–2008 for young scientists (up to 33 years old) was I. Ivanov (IM RAS) for the cycle of papers «A New Approach in the General Two-Doublet Higgs Model».

The International Bogoliubov Forum 2009 continued its work in Kiev where on 15–18 September the Bogoliubov Conference was held at the Bogoliubov Institute of Theoretical Physics of the National Academy of Sciences of Ukraine. The General Meeting of NAS of Ukraine was held on 21 September dedicated to the jubilee of the outstanding scientist. Festive events are also to be held in Nizhni Novgorod and Sarov (ARSRIEP — «All-Russian Scientific Research Institute of Experimental Physics», Russia).

XIII Workshop on High Energy Spin Physics (DSPIN-09) held on 1–5 September in Dubna continued a series of similar meetings, first of which took place 28 years ago in 1981 initiated by the outstanding theoretician L. I. Lapidus.

A characteristic feature of the meeting in 2009 was a wide geography of research centres, represented at the

Workshop. Scientists from Azerbaijan, Belarus, Belgium, Bulgaria, Brazil, China, Czechia, France, Germany, Iran, Italy, Japan, Poland, Portugal, Russia, Switzerland, Ukraine, and the USA participated in the Workshop.

The reason of the increased popularity of the meeting was, apparently, that this year has brought many fresh experimental results. Some of them were reported for the first time at the meeting. First of all, these are unique in accuracy measurements of BELLE collaboration of the transversal jet handedness or chiral-odd interference fragmentation function of transversally polarized quark into a pair of hadrons (report by A. Vossen), which opens a possibility to measure quark transversal polarization. For the first time preliminary results of measurement by COMPASS collaboration (I. A. Savin) of spin asymmetries on longitudinal polarized deuteron target were presented.

A number of talks were devoted to future experiments at the Large Hadron Collider (LHC) at CERN, in particular, to determination of spin and quantum numbers of Higgs particle (S. Rosatti, G. Bella) and search for Z' boson (E. Fortes, A. Tsytrinov), and to interesting possibilities of the polarized photon beams at the International Linear Collider (I. Ginzburg).

The results obtained at the accelerator complex of JINR VBLHEP were also presented (A. Kurilkin, A. Kiselev, V. Sharov, R. Shindin). Especially, it is worth mentioning L. Azhgirei's talk where the appearance of tensor polarization after passage of a deuteron beam through a substance for the first time was shown experimentally. The newest methods and results of calculations of the special features of spin dynamics in acceleration at the Nuclotron of polarized protons and light nuclei were reflected and proposals for further polarization studies on the base of the modernized complex Nuclotron-M were presented, especially at the now planned JINR collider NICA for heavy ions and polarized protons and deuterons (A. Nagaitsev, O. Ivanov, S. Shimansky, S. Piyadin, JINR). These calculations and proposals serve actually as a basis for the project of creation, on the base of Nuclotron-M and NICA, of the center for quark-gluon matter and polarization studies in the region of energies of $\sim 10 \times 10$ GeV for protons. The spin community presented at the Workshop supported these plans to create new unique possibilities for conducting polarization studies at the new accelerating complex. With such possibilities it will have no equal among other centers, and the obtained data will help us to solve the riddles of the spin effects, which have not had the solution since the 1970s.

The International Symposium «Exotic Nuclei — EXON 2009», which took place in Sochi, 28 September–2 October 2009, was dedicated to one of the most important and intensively developing areas of investigations in the field of nuclear physics —

the physics of nuclei in exotic states. This Symposium was organized jointly by four largest scientific centers where this field is explored — the Joint Institute for Nuclear Research in Dubna, the National Laboratory GANIL (France), the Research Center RIKEN (Japan) and the Scientific Center for Heavy Ions GSI (Germany). Co-chairmen of the Organizing Committee of the Symposium were Yu. Ts. Oganessian (JINR), S. Gales (GANIL), T. Motobayashi (RIKEN), S. Hofmann (GSI).

Participants of the Symposium «EXON 2009» were about 140 scientists from 24 countries and JINR (Dubna). The most representative were the delegations from Germany (20 persons), France (16), Japan (12), the USA (8). The scientific centers of these countries are much interested in collaboration with JINR (about 40 participants) and the institutes of Russia, which was represented by 16 participants.

The scientific programme included invited talks on urgent problems of the physics of exotic nuclei and the new projects for large accelerator complexes and experimental facilities.

The main talks on the properties of nuclei at the limits of nucleon stability dwelt on the newly observed unusual states at high values of the isospin (ratios of the proton and neutron numbers). For instance, it was reported about the change of the «accepted» magic numbers when approaching the limit of neutron stability, about the coexistence in one and the same nucleus of two or more types of deformation, as well as about the increase of nuclear stability on account of the deformation, which is very important for the understanding of the stability of pure neutron matter. The year 2009 was declared by UNESCO as the year of astronomy — the talk of S. Kubono (Tokyo Center of Scientific Studies, Japan) was dedicated to investigations in this field: he discussed the possibilities of studying important astrophysical problems with the use of radioactive secondary beams.

In addition to the light exotic nuclei, results of the latest experiments on the synthesis and studying of the properties of superheavy elements were reported. The extremely high level of the investigations of the superheavy elements which are carried out in Dubna and the existing collaborations was underlined in all these reports. A striking example is the experiment being performed at present at the U400 cyclotron of JINR FLNR by a large group of physicists and chemists under the guidance of Yu. Ts. Oganessian and S. N. Dmitriev, aimed at the synthesis of element 117 in collaboration with scientists from different USA laboratories who granted the ^{249}Bk target material. Besides, theoretical papers on the same topic, including predictions of possible SHE synthesis reactions and chemical properties of SHE were presented.

A separate day was dedicated to reports on the present and future heavy-ion and radioactive beam accelerator complexes in different scientific centers. The

laboratories, the co-organizers of the Symposium, are at present creating a new generation of accelerators which will make it possible to considerably improve the work on the synthesis and studies of the properties of new exotic nuclei. The projects SPIRAL, RIKEN RI Beam Factory, FAIR and DRIBs were discussed in the talks, as well as the plans for the new complex NICA.

Some other facilities for the production of radioactive beams were also presented: ALTO (France),

EXCYT (Italy), RIBRAS (Brazil), RIBs TAMU (USA), etc. The discussion of these talks showed that the beams of radioactive nuclei are the basic instrument for investigation of the properties of nuclear matter in extreme states.

Altogether about 80 oral presentations were given, and about 40 posters were demonstrated. All of them will be published in a special edition of the American Institute of Physics.

PARTICIPATION OF JINR IN INTERNATIONAL CONFERENCES

In 2009, JINR scientists and specialists participated in 224 international conferences.

The largest delegations representing JINR attended the following events: the Workshop on Geiger-Mode APDs for Frontier Detector Systems (Darmstadt, Germany); XLIII Winter School of the Petersburg Institute of Nuclear Physics on Nuclear and Particle Physics (Repino, Russia); the 13th CBM Collaboration Meeting (Darmstadt, Germany); XLIII Winter School of the Petersburg Institute of Nuclear Physics on Condensed Matter Physics (Repino, Russia); the 17th International Conference on Computing in High Energy and Nuclear Physics (Prague, Czechia); VIII Conference of Young Scientists, Specialists and Students Dedicated to the Day of Cosmonautics (Moscow, Russia); the International Conference «Nuclear Structure and Dynamics» (Dubrovnik, Croatia); the Workshop «New Opportunities in the Physics Landscape at CERN» (Geneva, Switzerland); II Spring School of the Neofit Rilski University (Bachinovo, Bulgaria); the Advanced Workshop on Neutron Probing for Compositional and Structural Characterization of Materials and Biological Samples (Delft, the Netherlands); the 4th International Conference «Nuclear Fission and Fission Product Spectroscopy» (Cadarache, France); the 14th International Seminar on Neutron Scattering Investigation of Condensed Matter (Poznan, Poland); the 4th International Sakharov Conference on Physics (Moscow, Russia); IX International School on Radiobiology for Young Scientists (Obninsk, Russia); the 11th International Conference on Heavy-Ion Accelerator Technologies (HIAT 09) (Venice, Italy); the International Workshop on Atom Effects in Nuclear Excitation and Decay (Trento, Italy); the PANDA Workshop (Torino, Italy); the International Conference «Nucleus-2009. Fundamental Problems and Applied Aspects of Physics: from Space to Nanotechnologies» (the 59th Workshop on Nuclear Spectroscopy and Structure of Atomic Nucleus) (Cheboksary, Russia); the Fifth Congress of the Vavilov Society of Geneticists and Breeders (Moscow, Russia); XIX Conference on Fundamental Atomic Spectroscopy

(Arkhangelsk, Russia); the International Conference on Neutron and X-Ray Scattering 2009 (Kuala Lumpur, Malaysia); the Symposium «Heavy Ions in Therapy and Space 2009» (Cologne, Germany); the 31st International Cosmic Ray Conference (Lodz, Poland); the International Laser Physics Workshop (LPHYS'09) (Barcelona, Spain); the 2009 Europhysics Conference on High Energy Physics (EPS HEP 2009) (Cracow, Poland); the International Workshop on «Recent Advances in Perturbative QCD and Hadronic Physics» (Trento, Italy); the 10th International Conference on Nucleus–Nucleus Collisions (NN2009) (Beijing, China); XIV International Lomonosov Conference on Physics of Elementary Particles (Moscow, Russia); the 2nd Russian School-Seminar «Modern Problems of Gravitation and Cosmology» (GRACOS-2009) (Yalchik, Russia); the 37th Annual Meeting of the European Radiation Research Society (Prague, Czechia); the International Conference «Hadron Structure'09» (Tatranska Strba, Slovakia); XIX International Conference on Few-Body Problems in Physics (Bonn, Germany); XXXIX International Symposium on Multiparticle Dynamics (ISMD 09) (Gomel, Belarus); the 16th Euroschool on Exotic Beams (Leuven, Belgium); the 14th International Conference on Small-Angle Scattering (SAS-2009) (Oxford, UK); the 11th International Workshop on Computer Algebra in Scientific Computing (CASC 2009) (Kobe, Japan); the International Bogolyubov Conference «Modern Problems of Theoretical and Mathematical Physics» (Kiyv, Ukraine); XII International Seminar on Electromagnetic Interaction of Nuclei (EMIN-2009) (Moscow, Russia); XI All-Russian Conference «Digital Libraries: Perspective Methods and Technologies, Digital Collections» (RCDL'2009) (Petrozavodsk, Russia); the International EGEE Conference (Barcelona, Spain); the 11th Small Triangle Meeting on Theoretical Physics (Kysak, Slovakia); XVIII International School on Nuclear Physics, Neutron Physics and Applications (Varna, Bulgaria); the International Conference-School for Students and Young Scientists on Optics, Laser Physics and Biophysics (SFM'09) (Saratov, Russia); the In-

ternational Conference «Modern Problems of Nuclear Physics» (MPNP 2009) (Tashkent, Uzbekistan); the 8th International Conference «Interaction of Radiation with Solids» (Minsk, Belarus); the International Conference «Nuclear Reactions on Nucleons and Nuclei» (Messina, Italy); the Joint Ceremonial Meeting of the Presidium of the Russian Academy of Sciences, the Scientific Council of the Moscow State University and the JINR Scientific Council dedicated to the Centenary of the Birth of N. N. Bogoliubov (Moscow, Russia); the

3rd CBM (FAIR) Collaboration Meeting (Trogir, Croatia); the 6th Russian Conference on Radiochemistry («Radiochemistry-2009») (Povedniki, Russia); the International Conference on Computer Algebra and Differential Equations (CADE 2009) (Pamplona, Spain); VII Kurchatov Youth Scientific School (Moscow, Russia); the Conference «X-Ray, Synchrotron Radiation, Neutrons and Electrons for Nanosystem and Material Research. Nano-Bio-Info-Cognitive Technologies» (Moscow, Russia).

DEVELOPMENT OF THE JINR INTERNATIONAL COLLABORATION AND RELATIONS DURING THE YEARS 1985–2009

	1985	1990	1995	2000	2005	2007	2008	2009
1. Number of short-term visits to JINR by specialists from Member States (not counting Russian specialists)	1469	1050	299	425	339	862	888	856
2. Number of visits by JINR specialists to Member States	600	778	682	682	927	921	691	838
3. Number of conferences organized by JINR	49	44	52	54	65	62	60	69
4. Number of visits to international conferences and research centres of non-Member States	119	437	1451	1946	2150	2052	1745	1702
5. Number of visits of scientists from non-Member States	144	563	1036	990	733	809	726	847
6. Number of JINR fellows	3	16	28	17	21	19	14	10

LIST OF CONFERENCES AND MEETINGS HELD BY JINR IN 2009*

No.	Name	Place	Date	Number of participants
1.	Readings to the Memory of V. I. Korogodin and V. A. Shevchenko	Dubna	13 January	91
2.	International Scientific Symposium «Mendeleev Periodical System, Its Significance and Development» (to the 175th Birthday of D. I. Mendeleev)	Dubna	20–21 January	111
3.	Meeting of the Programme Advisory Committee for Nuclear Physics	Dubna	22–23 January	77
4.	7th Winter School on Theoretical Physics	Dubna	25 January – 5 February	100
5.	Meeting of the Programme Advisory Committee for Condensed Matter Physics	Dubna	26–27 January	60
6.	Workshop «Neutrino Physics at Accelerators»	Dubna	27–29 January	44
7.	Meeting of the Programme Advisory Committee for Particle Physics	Dubna	29–30 January	60
8.	13th Scientific Conference of JINR Young Scientists and Specialists	Dubna	16–21 February	120
9.	105th Session of the JINR Scientific Council	Dubna	19–20 February	151
10.	International Seminar to the Memory of S. P. Ivanova	Dubna	21 February	100
11.	Meeting of the JINR Finance Committee	Dubna	24–25 March	51
12.	Session of the Committee of Plenipotentiaries of the Governments of the JINR Member States	Dubna	27–28 March	120
13.	12th Workshop «Nucleation Theory and Its Applications»	Dubna	1–3 April	58
14.	Workshop of the Scientific Council of the Russian Academy of Sciences «Electromagnetic Interactions of Relativistic Nuclei and Hadrons»	Dubna	7–8 April	51

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

No.	Name	Place	Date	Number of participants
15.	School for Students and Postgraduates of the Republic of Moldova	Dubna	10–16 May	32
16.	Days of Science of the Republic of Moldova at JINR	Dubna	14–15 May	105
17.	CBM (FAIR) Collaboration Workshop	Dubna	19–22 May	84
18.	APCTP–BLTP JINR Joint Workshop «Frontiers in Black Hole Physics»	Dubna	25–30 May	59
19.	17th International Seminar on Interaction of Neutrons with Nuclei (ISINN-17)	Dubna	27–30 May	110
20.	APCTP–BLTP JINR Joint Workshop «Frontiers in Nuclear Physics»	Dubna	27–31 May	30
21.	Workshop of the Baikal Collaboration	Dubna	2–4 June	52
22.	International Workshop «Relativistic Nuclear Physics from Hundreds of MeV to TeV»	Stara Lesna, Slovak Republic	5–11 June	70
23.	Meeting of the Programme Advisory Committee for Particle Physics	Dubna	10–11 June	59
24.	European School on High-Energy Physics (a CERN–JINR School)	Bautzen, Germany	14–28 June	137
25.	International Colloquium «Integrable Systems and Quantum Symmetries»	Prague, Czech Republic	17–21 June	70
26.	Meeting of the Programme Advisory Committee for Nuclear Physics	Dubna	22–23 June	80
27.	8th International Workshop «Application of Lasers and Storage Devices in Atomic Nuclei Research. Recent Achievements and Future Prospects»	Poznan, Poland	22–25 June	69
28.	ANKE/PAX Workshop on Spin Physics	Dubna	22–26 June	65
29.	Meeting of the Programme Advisory Committee for Condensed Matter Physics	Dubna	25–26 June	60
30.	Higher Training Courses in Nanotechnologies for CIS Countries «Synchrotron and Neutron Research in Nanosystems» (SYN-NANO)	Dubna	28 June – 19 July	61
31.	STAR Regional Collaboration Meeting	Dubna	29 June – 1 July	40
32.	International Conference «Nuclear Structure and Related Topics»	Dubna	30 June – 4 July	159
33.	5th International School on Nuclear Physics Methods in Radiobiology and Medicine	Bratislava, Slovak Republic	5–17 July	92
34.	13th International Conference on Symmetry Methods in Physics to the Memory of Yu. F. Smirnov	Dubna	5–9 July	76
35.	International Summer Student Practice in JINR Fields of Research	Dubna	5–26 July	84
36.	International Conference «Mathematical Modeling and Computational Physics»	Dubna	7–11 July	200
37.	International School-Workshop «Calculations for Modern and Future Colliders»	Dubna	10–20 July	80
38.	X International School-Seminar on Actual Problems of Microcosm Physics	Gomel, Belarus	15–26 July	70
39.	Advanced School on Modern Mathematical Physics	Dubna	20–29 July	73
40.	Baikal School on Physics of Elementary Particles and Astrophysics	Bolshie Koty, Russia	23–30 July	84
41.	International Conference «Symmetry and Spin»	Prague, Czech Republic	26 July – 2 August	80
42.	International Workshop «Supersymmetries and Quantum Symmetries»	Dubna	29 July – 3 August	100
43.	13th Annual RDMS CMS Collaboration Conference	Dubna	10–12 August	98

No.	Name	Place	Date	Number of participants
44.	International Bogolyubov Conference «Problems of Theoretical and Mathematical Physics»	Moscow, Dubna, Russia	21–27 August	239
45.	8th International Seminar to the Memory of V. P. Sarantsev «Problems of Charged Particle Accelerators and Colliders»	Alushta, Ukraine	19 August – 6 September	80
46.	13th Workshop on High-Energy Spin Physics (DSPIN'09)	Dubna	1–5 September	115
47.	XII International Symposium on Nuclear Electronics and Computing (NEC'2009)	Varna, Bulgaria	14–19 September	100
48.	2009 Practice for South African Students at JINR	Dubna	6–26 September	54
49.	Workshop (Round-Table Meeting) «Physics at NICA»	Dubna	9–12 September	80
50.	106th Session of the JINR Scientific Council	Dubna	24–25 September	168
51.	International Symposium on Exotic Nuclei (EXON2009)	Sochi, Russia	28 September – 2 October	140
52.	Dubna NuSTAR Meeting	Dubna	5–10 October	95
53.	All-Russian Scientific School «Modern Neutronography: Interdisciplinary Research in Nanosystems and Materials»	Dubna	12–20 October	50
54.	Training of Young Scientists from CIS Countries	Dubna	15 October – 15 December	19
55.	Practice for Students from Egypt	Dubna	18 October – 8 November	54
56.	8th Scientific and Technical Conference «Solid-State Electronics, Complex Function Blocks of Communications-Electronics Equipment»	Dubna	22–23 October	80
57.	JINR Finance Committee Meeting	Dubna	29–30 October	52
58.	Youth Innovation Convent of the Central Federal District	Dubna	9–10 November	163
59.	1st Dubna Young Scientists School «Management of Innovations»	Dubna	16–19 November	92
60.	Meeting of the Science Advisory Committee of the International Scientific and Technical Centre	Dubna	17 November	18
61.	Session of the Committee of Plenipotentiaries of the Governments of the JINR Member States	Astana, Kazakhstan	19–21 November	89
62.	Workshop «Ten Years of the Basic Chair of the Moscow State Institute of Radioengineering, Electronics and Automation at JINR "Electronics for Physics Research Installations"»	Dubna	23–25 November	170
63.	Meeting of the Working Group on Elaboration of the Programme for Innovative Cooperation within the CIS	Dubna	24 November	23
64.	All-Russian Workshop on Precision Physics and Fundamental Physical Constants	Dubna	1–4 December	71
65.	NA-62 Strow Detector Workshop	Dubna	1–4 December	20
66.	Workshop of the Baikal Collaboration	Dubna	1–4 December	53
67.	Constitutive Forum «CIS International Innovation Centre for Nanotechnology: Status and Prospects»	Dubna	17–18 December	99
68.	Round-Table Italy–Russia Meeting «Efforts in Fundamental Research, Prospects for Scientific and Technological Applications and Business Development»	Dubna	18–20 December	41
69.	Plenary Session of the Central Council of the Nuclear Society of Russia	Dubna	25 December	49