

KIM JONG IL

**LET US MAKE A FRESH TURN
IN THE DEVELOPMENT OF
SCIENCE AND TECHNOLOGY**

WORKING PEOPLE OF THE WHOLE WORLD, UNITE!

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Letter to Attendants of the National
Conference of Scientists
October 28, 1991

It is a very meaningful event to hold a national conference of scientists in 45 years since the first historic conference of scientists and technicians, convened at the initiative of the great leader Comrade Kim Il Sung and at which he elucidated the direction and ways for the development of science and technology in our country.

The current conference held in an atmosphere in which the entire people of the country are burning with great revolutionary enthusiasm to greet the 80th birthday of the great leader more resplendently will mark an important turning-point to effect a remarkable development of the national science and technology to meet the requirements of a new and higher stage of socialist construction.

Over the past decades the science and technology of the country have achieved great success under the wise leadership of the Party and the leader. Our national science and technology, which broke fresh ground right from scratch after liberation, are now equipped with a large legion of competent scientists and technicians, and strong material and technical foundations, capable of finding successful solutions to the considerable scientific and technical problems arising in socialist economic construction and the implementation of the technological revolution.

From the first days of building a new society the great leader considered the development of science and technology to be an important matter deciding the destiny of the country and the nation, showing deep concern for and taking unstinting care of it. Proceeding from the principles of the great Juche idea, he put forward the intellectuals as a component of the motive force of our revolution, along with the workers and peasants. He regarded the scientists and technicians as invaluable treasures of the country,

and took each and every one of them into his embrace, personally leading them all in their scientific research work. In spite of the difficult situation of the Fatherland Liberation War, decisive to the destiny of the nation, he initiated the establishment of the Academy of Sciences, thus laying a firm foundation for the development of our national science and technology; in each period of revolutionary development he inspired the scientists and technicians vigorously to the struggle for the Juche-oriented development of the national science and technology.

Our scientists and technicians have always worked devotedly to implement the Party's policy on science, upholding the leadership of the Party and the leader, thereby making a great contribution to socialist construction and the development of the national science and technology. After the war our people built new modern cities and rural communities on the debris, laid a solid foundation for an independent national economy in a short span of time by vigorously stepping up the technological revolution, and accelerated the grand cause of socialist construction forcefully at the speed of Chollima plus speed campaign. All this would have been inconceivable apart from the creative wisdom and devoted service of our scientists and technicians. They are now trusting and following our Party without the slightest vacillation even in the vortex of the present complex situation, and are making persistent efforts with all their talent and energy, heedless of appreciation by others, solely for the Party and revolution, to make the national economy Juche-oriented, modernized and scientifically-based and to develop the national science and technology to the advanced world standards in a short period of time.

It is a source of great pride for our Party and our people to have a huge army of revolutionary scientists and technicians who, taking the great Juche idea as their unshakable conviction,

are solidly sticking to their revolutionary posts appointed by the Party, and are striving heart and soul to support the Party and brighten socialism with science and technology.

I highly appreciate the loyal performance by our scientists and technicians of their honourable mission and duty to their motherland and people upholding the leadership of the Party, and extend my warm thanks to the attendants of this conference and all the other scientists and technicians of our country.

We are now faced with the heavy task of developing the national science and technology to a new and higher stage by making a revolutionary turn in scientific research work.

Developing science and technology quickly is an urgent requirement of our revolution and for the building of socialism and communism.

Socialist and communist society can be built only on the basis of highly developed science and culture. Scientific and technological development is an important guarantee for stepping up the technological revolution to ensure the rapid development of productivity and provide the people with material and cultural lives, independent and creative. The technological revolution is a process of introducing the achievements of modern science and technology to production and disseminating them. Only when the technological revolution is promoted vigorously through the rapid development of science and technology is it possible to lay solid material and technical foundations of socialism and communism, rid the workers of difficult and hard labour, and ensure comfortable material and cultural lives for them.

To develop science and technology is now urgent for safeguarding the cause of socialism and brightening our style of people-centred socialism all the more.

Now that the imperialists are intensifying their manoeuvres to stifle socialism more than ever before, advertising their

“economic and technical superiority,” we must rapidly develop science and technology in order to demonstrate the advantages of socialism over capitalism, and emerge victorious in the economic and technical confrontation with the enemy.

In order to successfully fulfil the Third Seven-Year Plan by giving the fullest play to all the potentials of our existing economic foundation and accomplish the complete victory of socialism, we must make a great turn in the development of science and technology.

Now is the age of science and technology, and unprecedentedly fast speed is the major characteristic of the development of modern science and technology. The smaller a country is, the more efforts it must channel into scientific and technological progress so as to develop quickly.

We must attain the advanced level of the world as soon as possible in the development of science and technology by running ten steps or even one hundred steps when others take one step.

It is our Party’s unshakable determination to develop our national science and technology to the advanced level of the world in the near future. Our Party has set the objectives for development of science and technology to attain by the year 2000, to meet the urgent requirements of the developing revolution and the trend of development in modern science and technology. When we attain these objectives, our country will have reached the advanced level of the world in major technical and economic indices, and rank among the advanced countries in scientific and technological development.

We are provided with the conditions for and the possibility of attaining the grand objectives for the development of science and technology. All scientists, technicians and leading officials must turn out in the struggle to attain these objectives with great revolutionary enthusiasm and firm determination.

For the present, you must vigorously struggle to carry out a new three-year plan for the development of science and technology from this year.

The main task of this plan is to develop the key branches of science and technology to a new and higher stage, and actively promote the modernization of the national economy on the basis of the latest achievements of science and technology. During the period of this plan we must concentrate our efforts on electronics, heat engineering, biotechnology, mechanical engineering, chemistry and the development of new materials so as to develop them to a new and higher level, and vigorously promote the building of new factories and the achieving of technical improvements by up-to-date science and technology.

We must, above all else, continue to channel great efforts into the development of electronics.

Electronics is the most important sphere of science, a sphere constituting the core of modern science and technology. Without its development it will be impossible to equip all the sectors of the national economy with modern techniques and put all production processes and management activities on a new scientific and technical basis.

The scientists and technicians in the sphere of electronics must work hard to develop electronics and the electronics industry to a fresh and higher level, and introduce computers and robots into the key sectors of the national economy, on the basis of the successes and experiences they have already gained. They must improve the qualities of the elements and materials used for newly-developed microcomputers, and increase the rate of their domestic self-sufficiency, actively develop programs and expand the scope of computer use. Besides, they must also solve scientific and technical problems arising in increasing the production of large-scale integrated circuits and chips for special

semiconductors, and in making high-quality electronic consumer goods and installing optical-fibre communication systems.

We must pay close attention to the development of mechanical engineering. The present trend of the development of this industry is to effect digital control of machinery and other equipment and introduce robots into the production process. The mechanical engineering sector must ensure the precision, high speed and intelligence of machine tools, and raise the quality of machinery to a high level by inventing high-proficiency hydraulic machines, mechanical elements and automation devices. For the present, they must set the production of *Kusong-104* lathes on a regular basis and do their best to invent new digital-control, modern versatile machine tools and various other precision machines.

The development of science and technology, machinery and equipment is guaranteed by the development of materials. Unless the new materials sector is developed, it will be impossible to ensure Juche-oriented development of the electronics industry, bring about modernization of the machinery industry, and promote the development of up-to-date science and technology as a whole. The scientists and technicians in this sector must step up research work to develop compound semiconductors and precision porcelain materials, essential for the electronics industry, and to industrialize their production, and push ahead with research into developing new materials such as superconducting materials and metal plastic composite materials as well as materials that can substitute for what are not available in our country, in a far-sighted way.

To develop heat engineering is a pressing requirement for easing the strain on the thermal power supply in our country and satisfying the ever-growing demand for energy of the national economy. In order to solve the problem of thermal power, we

must, above all, adopt a scientific way for making effective use of low-heat coal and meta-anthracite, the deposits of which are abundant in our country. The scientists and technicians working in this field must channel their efforts into studies with regard to a new, large power-generating boiler burning low-heat coal and improve the thermal efficiency and safety of combustion of the existing large boilers. In addition, they should find solutions to the relevant scientific and technical problems to make effective and economical use of energy, and put efforts into research to develop new kinds of energy such as solar and wind-power energies, thus opening up a broad vista for their use.

Developing biotechnology and chemistry is of great significance in improving the people's living standards, including the quality of their food and clothing.

It is important for the biotechnology sector to exert efforts to develop cell engineering, gene engineering, microbiology and other branches of modern biology, and apply the achievements of modern biology to agriculture, stockbreeding, medical science and the food industry, so as to be able to produce high-yield crops and new varieties of domestic animals as well as a large quantity and variety of quality medicines and foodstuffs.

The scientists and technicians in the field of the chemical industry must intensify their research into vinalon, the fibre of the Juche type, so as to improve its quality, expand its variety and raise the level of the technique of its production to the highest. They must also ensure that the quality chemical goods which are badly needed for agriculture, the light industry and various other branches of the national economy, are produced from raw materials available in our country.

While directing our main efforts to the key sectors of science and technology, we must develop the new spheres of science and technology, including lasers, and actively introduce the latest

achievements of science and technology into the new factories and projects for technical improvement. In addition, we must intensify the study of mathematics, physics, biology and other basic sciences so that they contribute positively to the national economy and the development of science and technology.

At the same time as developing the new spheres of science and technology and intensifying the study of up-to-date science and technology, scientists and technicians must strive to solve the problems of making an effective use of the existing economic foundations, of putting production on a steady basis and of improving the quality of products in various sectors of the national economy, including the mining industry, metal industry, power industry and railway transport. They must also pay close attention to the technical improvements in the production of magnesia clinker, in the cultivation and processing of insam, a traditional medicinal root in our country, in the production and processing of cocoons and in traditional Korean medicine.

In order to successfully carry out the tasks facing the field of science and rapidly develop the national science and technology as a whole, we must firmly establish Juche and thoroughly embody collectivism in scientific research, and closely combine scientific research and practical production. This is the consistent principle adhered to by our Party.

The basic aspect of scientific research is to develop science and technology in the direction as required by our Party and revolution, from the unshakable standpoint of Juche. The study and development of science are aimed at finding solutions to the scientific and technical problems arising in the course of the revolution and construction, so as to ensure national well-being and development and provide the people with comfortable material and cultural lives. Such items of science and technology as do not serve the revolution of our country or contribute to our

people's interests are of no use, no matter how advanced and modern they may be. Therefore, we must firmly maintain the Juche-oriented viewpoint and attitude in scientific research—always putting the interests of our revolution and our people at the centre of our thinking and acting.

Scientific research is an activity aimed at elucidating the law of development of the world and finding a way to transform and develop nature to meet man's demand for independence. Therefore, it requires a high degree of creativity. As topographical conditions are different from one country to another, and even the same natural law changes in its form of expression and mode of action when the natural conditions and circumstances change, all the problems arising in scientific research should be solved creatively on the basis of the actual conditions of one's own country.

In order to establish Juche in scientific research, scientists and technicians must equip themselves firmly with the Juche idea and the Party's lines and policies, its embodiment, acquire a deep knowledge of the reality of our country, and give full play to the revolutionary spirit of self-reliance, solving all scientific and technical problems in a revolutionary manner by their own efforts. The Party's lines and policies concentratedly reflect the requirements of the Korean revolution and the interests of the masses, and comprehensively illuminate the direction and ways of scientific and technological progress. Scientists and technicians must thoroughly equip themselves with the Party's lines and policies, and always think and act on this basis.

We must categorically reject flunkeyism and dogmatism in scientific research, which would certainly lead this work to failure. The flunkeyist and dogmatic viewpoint and way of thinking numb one's creativity, resulting in failure to have a correct understanding of various ever-changing realities and

develop a scientific way for scientific and technological development and socialist construction. We must ensure that our scientists and technicians do not harbour illusions about the advanced science and technology of other countries, instead of believing in their own ability. It is a terrible mistake to think as if socialism is inferior to capitalism in developing science and technology, worshipping the advanced science and technology of capitalist countries. In any society the driving force of the scientific and technological development is the creativity of the masses. If we give full play to the revolutionary enthusiasm and creative wisdom of scientists, technicians and producers, and tap the national economic potential to the maximum, from the standpoint of Juche, socialism can certainly surpass capitalism even in the field of science and technology.

To embody collectivism in scientific research is an intrinsic demand of socialist society and a basic way for the rapid development of science and technology. Socialist society is a collectivist society in which all the members unite as comrades and cooperate with one another in a comradely manner, guided by common objectives and interests. It is only in social unity and cooperation with one another that men can become powerful beings capable of transforming the world. The superiority of socialism and the source of its strength lie in the fact that all its members achieve comradely unity to make concerted efforts for revolutionary struggle and construction. In collectivism lies also the source of strength for developing science and technology. However clever an individual may be, he or she can acquire only a portion of the scientific and technological success achieved by humanity. With individual strength and wisdom alone it is impossible to get a comprehensive cognition of and transform the complicated and multiform world. Only when people pool strength and wisdom with one another and make comprehensive

use of the scientific and technological achievements amassed by mankind throughout its history, can they fulfil their role as the prime mover, actively transforming the world as suited to the needs of mankind.

The embodiment of collectivism in scientific research requires the establishment of an atmosphere in which scientists and technicians strengthen comradely cooperation and frankly exchange their success and experiences in their research and widely generalize them, under the slogan “One for all and all for one!” They must also intensify joint and cooperative research, which makes it possible to efficiently mobilize and use the existing scientific and technological capabilities and find opportune and successful solutions to difficult scientific and technical problems. In the scientific research sector, joint and cooperative research work must be extensively organized according to the magnitude of the objects for research and the content and nature of problems to be solved, and scientists and technicians should be encouraged to carry out their tasks by concerted efforts.

The greatest obstacle to the embodiment of collectivism is self-centredness, which is absolutely intolerable in our society as an expression of selfishness that is the practice of thinking only of oneself and giving precedence to individual interests over those of the collective. Once tolerated, it will bring only the interests of one’s unit and sector to the fore, rather than those of society and the collective, causing great harm to the revolution and construction.

Self-centredness is taboo in scientific research. Since all the branches and spheres of scientific research are closely interlinked as a whole organism, we cannot develop science and technology without eradicating self-centredness. Now that scientific and technological cooperation and exchanges are thriving extensively

across the world it is anachronistic for scientific research institutes and researchers, out of self-centredness, to make fence off from one another while engaging in the research work within the boundary of one and the same country.

In scientific research, all fences must be pulled down, and relations and creative cooperation between scientists and technicians, between research institutes and between research institutes and universities and colleges must be made closer.

Combining scientific theory and actual production closely is a basic requirement for ensuring success in scientific research and stepping up the technological revolution.

Scientific research and production are inseparable links interacting with each other in the process of social production. Their close connection makes it possible to ensure rapid scientific and technological progress and accelerate economic construction on the basis of the achievements gained in scientific research.

Production practice is the source and motive force of scientific and technological development and the best criterion for judging the results of scientific research. Science and technology separate from production cannot develop and are of no value. Only when it is organically combined with production can scientific research render a tangible contribution to finding solutions to urgent problems arising in the revolution and construction, and its achievements prove their great worth in promoting the technological revolution and people's living standards. Scientists and technicians, basing themselves firmly on reality, must take the problems arising in practical socialist construction as the subjects of their scientific research, and solve the scientific and technical problems appearing in the application of the achievements of their work to production, in a responsible manner.

In order to combine scientific research with production practice, scientists and technicians must go deep into the reality

of socialist construction; only then can they know the actual state of the national economy and problems awaiting immediate solution in the production and construction, and acquire rich and valuable experiences of the producer masses.

The shock-brigade activities of scientists and technicians are an advantageous form of combining scientific research and production practice. Such shock brigades enable scientists and technicians to go out to the factories, enterprises and construction sites as an organized force to conduct creative activities together with producer masses there, thus making it possible for them to solve in a mobile way the major scientific and technical problems of great significance in developing the national economy and to readily apply new achievements of scientific research and advanced technology to production. We must build up such shock brigades with competent officials and invigorate their activities so that they serve as the vanguard not only in name but in fact, making breakthroughs in finding solutions to the important scientific and technical problems arising in the course of economic construction.

If we are to combine scientific research closely with production practice we must rationally organize and distribute research institutes on the principle of bringing them near to the sites of production and construction. In particular, we must build up industrial research institutes and the like at the major factories and enterprises so that they can solve by their own efforts the scientific and technical problems arising in putting production on a steady footing and stepping up technical improvement.

What is important in combining science and production is to step up the verification of the results of laboratory research through their tests in pilot plants and their introduction into production. No matter how excellent the achievements in laboratory research may be, they are not complete until they are

applied to production. A new achievement in scientific research becomes a perfect theory only when it proves its validity and universality through production practice. The scientific research sector must make it a rule to verify the results of laboratory research through testing in pilot plants and in the process of introduction to production and, on this basis, further research into them and introduce into production only the achievements which give complete satisfaction to all scientific and technical problems that may appear in the production process and with which it is completely familiar.

In order to fully implement the Party's policy on science and bring about a fresh revolutionary change in the development of our science and technology, it is important to enhance the role of scientists and technicians.

The rapid development of science and technology depends entirely on the efforts and work of the scientists and technicians, the undertakers and masters of scientific and technical progress. When they fulfil their responsibility and role with a high sense of the honourable mission and the duty they assume before the Party and revolution, a new upsurge can be effected in carrying out the scientific and technological revolution.

In order for the scientists and technicians to perform their responsibility and role in developing the national science and technology, they must become genuine loyalists devoted to the Party and the leader throughout their lives, staunch revolutionaries possessed of an unshakable conviction in the revolutionary cause of Juche and strong will, and competent creators of science and technology conversant with expertise. Unfailing loyalty to the Party and the leader, unshakable conviction and will and a high degree of creative ability—these are the qualifications and qualities essential to our scientists and technicians.

They must equip themselves firmly with the revolutionary

outlook on the leader, think and act as required by the Party's ideas and intentions, and cherish a high sense of loyalty, trusting and following only the Party anytime and anywhere. Loyalty to the Party and the leader is the revolutionary duty and obligation of our intellectuals who are honoured with trust and title as the Party's eternal companions, faithful assistants and good advisers. All scientists and technicians must revere and hold the Party and the leader in high esteem from the bottom of their hearts and strive heart and soul to translate the Party's idea into reality. With full confidence in the fact that their loyalty to the leadership of the Party and the leader leads to the victory of our revolution, the welfare of our people and the eternal prosperity of our nation, they must solve all scientific and technical problems no matter how few, as wished by the leader and as intended by the Party, and bring every single item of success in their research to the highest possible level, success that can give pleasure to the leader.

They must equip themselves firmly with an unshakable conviction in socialism and patriotism. To develop science and technology is not just a routine matter but an important political task for ensuring the victory of the socialist cause and accomplishing the independent development and prosperity of the nation. He who is not confident of the validity and victory of the socialist and communist cause cannot display revolutionary zeal and creativity in the struggle to step up socialist economic construction and improve the people's material and cultural lives; he who lacks ardent love for his country and people and national pride cannot work heart and soul to raise our science and technology to the advanced level of the world in the shortest possible time. Our scientists and technicians must advance unswervingly along the road of the Juche revolution solely under the leadership of the Party, without the slightest vacillation, no matter what obstacles and difficulties may lie on the way ahead.

They must devote everything to the struggle to develop our national science and technology from the Juche-oriented standpoint, make the country ever more prosperous and further brighten our style of socialism.

The revolutionary spirit of self-reliance and fortitude and strong will are qualities essential to scientists and technicians. Only the man who studies energetically and unyieldingly, inspired by these qualities, can scale the highest peak of science. Scientists and technicians must overcome the challenging difficulties and hardships on the rough road of their scientific research by their own efforts and give full play to the revolutionary spirit by which they complete the tasks assigned to them without wavering before temporary failure.

Scientists and technicians must decisively improve their qualifications.

They cannot fulfil their duty with only loyalty and revolutionary enthusiasm, because they must serve the Party and revolution with science and technology. The present reality, in which science and technology are developing at a tremendously fast speed and we are faced with a considerable number of new scientific and technical problems, requires more urgently than ever that scientists and technicians improve their practical qualifications. Scientists and technicians are in charge of the science front of the Party; when they fail to fulfil their duty just because of their poor qualifications, it is more shameful than anything else.

They must study and strive energetically to become efficient men capable of undertaking their heavy responsibilities before the times and revolution. Knowledge is strength. They must all develop the revolutionary habit of study so as to become men of wide knowledge who are conversant with their special fields, well-informed of the trend of the developing modern science and

technology and possessed of an extensive knowledge of various branches, and to become experts who are capable of finding effective solutions to all difficult scientific and technical problems.

We must not leave the work of improving their level of scientific theory only to their willingness. Not all scientists are very eager to study. At the same time as encouraging scientists and technicians to develop the habit of studying voluntarily, we must tighten control over their studies and take various measures for improving their levels, including reeducation.

We must step up the administration work of science and technology.

Scientific research can be successfully conducted only under the unified guidance of the state. In our society, where the national economy is managed under the unified guidance of the state and developed in a planned and balanced manner according to the law of socialist economy, it is impossible to develop science and technology as required by economic development unless it is controlled by the unified guidance of the state. The problem of the guidance of scientific research is all the more important as the scientific research institutes increase in number and many new spheres of science come into existence, giving rise to intricacy in the relations between the scientific and technical branches with every passing day.

What is important in the administration of science and technology is, above all else, to do the planning work efficiently so as to correctly set the tasks of scientific research and determine the right order of priority.

The reality of our country, in which we must accelerate socialist economic construction and develop science and technology to the advanced level of the world in the shortest possible time, raises numerous scientific and technical problems for science to solve. However, we must not attempt to solve

many problems at one go, prompted by ambition, without taking the actual conditions into account. The administrative bodies of science and technology must not spread scientific research widely but properly determine problems to which solutions should be found urgently in socialist construction and the main link to be dealt with on a priority basis in developing the science and technology of the country to the advanced level of the world so as to concentrate efforts on them. They must also exert efforts on the research assignments in hand to finish them in sequence before setting about new assignments.

In order to ensure success in scientific research, the authorities must give the scientists and technicians and scientific research institutes exact research assignments and organize the work scrupulously so that scientific forces and material and technical means can be used effectively. Clear objectives and stage-by-stage assignments for research should be given to them in conformity with their characteristics and preparedness, so that they can carry out their tasks with a high sense of responsibility. In addition, they must arrange meticulously the relations and portions of work between the Academy of Sciences, higher education institutes and scientific research institutes by branches, to actively mobilize and make use of the scientific and technical forces throughout the country and prevent overlapping research.

Regular supervision and guidance of the process of scientific research work is a positive method to vigorously promote scientific research. The administrative bodies of science and technology must establish a strict order whereby they constantly check and supervise, and regularly review the fulfilment of research assignments to find opportune solutions to the challenging problems, so that the assignments for scientific research are carried out without fail.

We must intensify the assessment of new achievements of

scientific and technological research work, and adopt measures to introduce them immediately into production and construction.

If we are to apply the achievements of scientific research in production we must conduct examination of them efficiently. Poorly-tested research results, when introduced into production, may entail waste of a great deal of funds, materials and manpower, and cause a hindrance to production, and, furthermore, may give rise to serious consequences in the development of the national economy. We must establish discipline whereby the branch science and technology assessment commissions and the new technology assessment and introduction commission should introduce only the achievements of research with which they are familiar and which are of economic and technical effectiveness by enhancing their sense of responsibility and role, and ensure that no fame and self-interest work in evaluating the achievements of research and applying them to production.

Discipline should be established of compulsorily carrying out the plans for scientific research and introduction of achievements into production. The administrative organs of science and technology must work out these plans in consultation with the commissions, ministries, factories and enterprises concerned, and dovetail them into the national plan, so that the research institutes, and the factories and enterprises in charge of the introduction of achievements fulfil them compulsorily. Consequently, they must encourage the scientists and technicians to produce valuable results in their research, while at the same time making scientific research achievements gained through painstaking study and hard work introduced into production immediately, so that they prove their worth in developing the national economy and improving the people's living standards.

It is important to properly appreciate the results of scientific research. In order to inspire the scientists and technicians to

creative enthusiasm and stimulate them to actively contribute their knowledge and technology to production and construction, we must correctly appreciate the achievements of their work politically, materially and academically. The appreciation of the achievements of scientific research must be relative to the extent to which they contribute to the development of the national economy, and science and technology. When the scientists and technicians have solved scientific and technical problems of great value arising in the course of actual work and effected the application of their achievements to production, so bringing them to prove their worth, or when they have developed modern instruments and appliances for scientific experiments and new, modern equipment, they should be awarded official commendations and academic titles and their degrees should also be raised higher as suited to the value of the achievements. To this end, it is necessary to generally examine the conventional regulations for evaluating the results of scientific research and granting academic titles, and reform them to meet the demands of the developing reality.

We must pay close attention to building up the ranks of scientists and technicians. Our national economy is developing in an all-round way and growing in scale with every passing day, and new realms of science are coming into existence one after another. This reality presents the need to expand the ranks of scientists and improve the level of their qualifications. In the field of scientific research, it is necessary to continuously reinforce the ranks of scientists and technicians with young intellectuals to meet the ever-increasing demand for them, and, in particular, build up the ranks of researchers in the field of up-to-date science and technology with excellent young and promising men. The success of scientific research is by no means decided by the number of researchers. We must make up the ranks of scientists mainly on the basis of their competency and settle them in their

workplaces. We must launch a powerful struggle among the men in the field of scientific research to improve their qualifications, so as to decisively increase the proportion of associate doctors and doctors among them.

We must work actively to embrace advanced science and technology.

Embracing up-to-date science and technology is an important way to develop the national science and technology quickly. Science and technology are the priceless creation and common wealth of mankind containing all the creative wisdom and talent of mankind. If we do not accept the achievements of the latest science and technology of the world extensively, it will be impossible to raise our national science and technology as a whole to the world level within the shortest period of time.

Accepting advanced foreign science and technology is not contradictory to the work of establishing Juche in the sphere of science and technology. By Juche-oriented development of science and technology, I mean that you must oppose dogmatism and a servile attitude towards advanced countries in the sphere of science and technology, not that you should not introduce advanced foreign science and technology. Developing our science and technology to a high level by introducing the advanced science and technology of the world makes it possible for us to successfully solve the scientific and technical problems arising in our revolution and construction, and implement the principle of self-reliance more creditably.

We must intensify exchanges and cooperation with foreign countries in the domain of science and technology. This will help us to become informed of the trend of development in modern science and technology and their latest successes in time and save a great deal of time, manpower and funds in scientific research. In the field of science and technology, we must make scientific and

technological exchanges with foreign countries brisker in various forms and ways, including exchanges of science and technology books and personnel, and organize joint ventures and collaboration on an extensive scale with advanced countries in the realm of the latest science and technology such as electronics. It is also necessary to import whole highly-modernized factories, which, in the course of their operation, will enable us to quickly acquire the latest science and technology, and will be helpful in our putting other factories on a modern footing on the model of the former.

Scientific and technological exchanges and cooperation with foreign countries must by all means be conducted on the principle of quickly developing our national science and technology and taking in only what is necessary for making the national economy Juche-oriented, modern and scientifically-based.

We must intensify scientific and technological information work. Efficiency in this work makes it possible to gather valuable pieces of information badly needed in the development of science and technology, at the expense of little investment and endeavour. We must build up the ranks of workers in this field with competent men, modernize the means of information and establish an information monitoring system based on the up-to-date communication means and computers, so collecting and analysing the scientific and technical information data in a comprehensive and systematic way. Furthermore, it is important to intensify the work of integrating new scientific and technical data and giving timely information about them to scientists and technicians.

Extensive cooperative and joint research work with our overseas Korean scientists must be organized. The great leader said long ago that all the people who loved their country and nation should contribute to the building of a new country, those with money donating it, those with knowledge contributing it, and those

with strength devoting it. Developing the national science and technology is a sacred patriotic work to achieve the welfare and development of the country and national prosperity, and realize the independent and peaceful reunification of the country as soon as possible. We must extensively organize creative cooperation with the Korean scientists living in Japan and other foreign countries so that they can participate earnestly in the patriotic work of developing the science and technology of their motherland.

In order to intensify guidance for scientific research, we must enhance the role of scientific and technical administration organs. We must enhance the role of the scientific appreciation commission in its academic guidance for scientific research, and consolidate the leadership function of the Academy of Sciences and its branches and the branch scientific leadership organs, so as to eradicate subjective and arbitrary practices of individual officials, and give full scope to the creative initiative and positive stand of the masses of scientists and technicians. The State Commission of Science and Technology plays an important role in developing our national science and technology. It must establish a unified system of leadership for the administrative work of science and technology, and concentrate all the scientific and technical forces available in scientific research institutes as well as the higher educational institutions and production organs to solve the problems of great significance in the development of the national economy.

Laying a solid material and technical foundation for scientific research and creating adequate conditions for research are prerequisite for the rapid development of science and technology. No matter how solidly the ranks of scientists and technicians are built and how high their ideological consciousness and ability, it will still be impossible to expect success in scientific research unless the requisite conditions for research are provided properly.

We must build up scientific research bases materially and technically, as required by the development process of modern science and technology, bases which are the key to the work of scientific research and the development of science and technology. Without building them up on a modern basis, it will be impossible to ensure the success of scientific research activities and develop our national science and technology in an independent and far-sighted way. Research rooms, laboratories, intermediate pilot plants and other facilities necessary for scientific research must be furnished adequately on the basis of accurate calculation of the immediate and future demands of the scientific research sector.

The development of modern science and technology requires sophisticated and highly-efficient experimental apparatus, and a variety of reagents and materials. We must build a solid base for the production of experimental equipment capable of meeting the ever-increasing demands for them, lest research work should be hindered. The scientific research sector must establish a strict system of planning the production of equipment, apparatus and reagents necessary for research, and ensuring that the top units supply them all the way down the chain, as required by the Taean work system, so that scientists and technicians do not have to move here and there in search of them.

The commissions and ministries of the Administration Council must supply, on a top-priority basis, the equipment and materials which are needed for building scientific research bases and creating the conditions for research, and import experimental devices, materials and reagents necessary for scientific research but which are not produced in our country as yet.

We must steadily increase investment in the scientific research sector. Giving full priority to scientific research over the development of the national economy is a law-governed

requirement for socialist economic development. Without developing science and technology through investment in scientific research, it will be impossible to ensure the high-speed growth of production. It is short-sighted to attach importance only to the production at hand and neglect scientific research and the development of science and technology. We must increase the investment in scientific research work so as to give full precedence to science and technology over the national economy, and unconditionally provide the necessary funds to this sector every year.

We must intensify the Party's guidance of scientific research work.

The Party's guidance is a decisive factor determining success in all work. Without its intensification in scientific research it will be impossible to advance the national science and technology at a high speed to meet the requirements of Party policies.

What is important above all else in this undertaking is to work efficiently with the scientists and technicians. The Party organizations must rally them closely around the Party and the leader, and inspire them to great efforts for the implementation of the revolution in science and technology. They must do scrupulous ideological work with scientists and technicians in various forms and by various methods in conformity with their characteristics, and intensify organizational life among them so as to give them ceaseless political training.

In doing so they must lead all the scientists and technicians to become revolutionary intellectuals who are firmly equipped with the Juche idea, who have cast their lot with the Party forever, and who loyally support the Party with science and technology.

Party organizations should take good care of scientists and technicians, and lead them to dedicate all their wisdom and talent to scientific research. At the same time, they should make sure

that the scientists and technicians are free from petty worries. They must extend high appreciation to meritorious scientists and technicians for their research services and give them prominence so that they can work with a high degree of political enthusiasm and effect a new upsurge in scientific research.

What is important in the Party's guidance of scientific and technological work is to supervise and guide the Party's policy on science and technology so that it is carried out correctly. The Party organizations must energetically push ahead with the implementation of the Party's policy on science and technology, always regarding it as a task for their own committees. They must keep regular accounts and control of the state of this work, and correct any deviations in an opportune manner, so that the Party's policy on science and technology is carried out to the letter.

The Party organizations must lead all the officials to have a correct viewpoint and attitude towards science and technology. Nowadays, some officials are not paying due attention to the development of science and technology, neglecting to provide suitable conditions for scientists and technicians in their research work. This is mainly because they lack the unshakable viewpoint that science and technology is the lifeline for national economic development and the implementation of the technological revolution. Without developing science and technology right now it will be impossible to develop the national economy any further and fully ensure independence in politics, self-sufficiency in the economy and self-reliance in defence. The attitude to science and technology is precisely the attitude to the revolution, and neglecting science and technology is as good as giving up the revolution.

Party organizations must help all officials to have a proper attitude towards science and technology, and render active assistance to scientific research from the standpoint of taking full responsibility for it, not from the objective standpoint. Scientific

research institutes are organs producing spiritual and cultural wealth, while scientists and technicians are members of the working class engaged in mental work. Party organizations must not mobilize the scientists and technicians for work irrelevant to scientific research, regarding research institutes as non-productive bodies, and ensure that they are fully provided with time and other conditions for their research as well as their living conditions. They must step up educational work among senior officials and ensure that they have a proper attitude towards science and technology, while at the same time launching a fierce ideological struggle against such defects as ignoring or disregarding science and technology.

We must stimulate public interest in science and technology. To develop science and technology is an undertaking not only for the masses themselves but an undertaking of each person, and which can be successful only when it involves the broad masses in it. Party organizations must instil into the minds of all Party members and other working people the importance and significance of the development of science and technology, so that they launch a vigorous mass technical innovation campaign. Besides, they must positively give social prominence and preferential treatment to scientists and technicians, so as to prompt social interest in science and technology all the more.

Our scientists and technicians are now faced with a heavy yet honourable task to develop the national science and technology to the world level. The Party's trust in and expectations from them are great indeed.

I firmly believe that all our country's scientists and technicians will do their best to make a revolution in science and technology with unflinching loyalty to the Party and the leader, thereby scaling a new and higher peak of science and technology without fail.