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SCIENTIFIC AFFAIRS  
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INTERNATIONAL AFFAIRS

BRIEFS

SOVIET GENETICIST IN POLAND--[Photo caption] Prof Nikolai P. Bochkov, Director of the Moscow Institute of Medical Genetics and corresponding member of the USSR Academy of Medical Sciences, is visiting in Poland. Prof Bochkov is an expert of the World Health Organization in the field of genetics and is the author of about 50 works concerning this subject. He is especially interested in population genetics and is cooperating with the Institute of Human Genetics of the Polish Academy of Sciences in this field. During his visit Prof Bochkov has met with staff members of the Polish Academy of Sciences Institute of Human Genetics, including docent Ignacy Wald. [Photo shows Prof Bochkov and Ignacy Wald. Text]  
[Warsaw SZTANDAR MŁODYCH in Polish 13 Apr 77 p 2]

CSO: 2602

BULGARIA

REPORT ON SIXTH CONGRESS OF SCIENTIFIC-TECHNICAL UNIONS

Sofia TEKHNICHESKO DELO in Bulgarian 19 Mar 77 pp 1-2, 6

[Report: "Noteworthy Forum of Scientific and Technical Thought"]

[Text] This is the sixth congress of the Scientific and Technical Unions in Bulgaria! The thousands-strong army of engineers, technicians, economists, agricultural specialists, and innovators in all fields of science and technology and all national economic sectors welcomed this highest forum with unparalleled creative upsurge. In answer to the decisions of the 10th and 11th party congresses thousands of significant projects were implemented and the members of the NTS [Scientific and Technical Unions] made a worthy contribution to the accelerated scientific and technical progress of the country.

The day of the opening of the Sixth NTS Congress, 11 March 1977, will be recorded as one of the noteworthy events in the chronicle of the unions. Only several days before that the BCP Central Committee Politburo had published its decision on upgrading the role of the NTS in the period of building a developed socialist society--an outstanding program document pointing the directions for the further creative activities of the workers on the scientific and technical front in our country.

Party House, Georgi Kirkov Hall. Over 800 delegates from the entire country--worthy representatives of the 265,000-strong army of makers of technical progress, organized in the NTS--have come here. Enthused and inspired by the warm concern of the Bulgarian Communist Party and the high trust it has given them, they bring the charge of creative energy and readiness to dedicate all their efforts to the even more intensive and all-round development of science and technology in our country and for the prosperity of the entire Bulgarian people.

These are solemn minutes. It is 9 am. Ivan Popov, chairman of the NTS Central Council proclaims the congress opened.

Standing, the congress delegates and guests welcome with applause and lengthy exclamations the officials: Todor Zhivkov, BCP Central Committee first secretary and chairman of the State Council; Tano Tsolov, BCP Central Committee Politburo member and first deputy chairman of the Council of Ministers; Kiril Zarev, deputy chairman of the Council of Ministers and the chairman of the State Committee for Planning; Georgi Andreev, secretary of the BZNS Standing Committee, and secretary of the National Council of the Fatherland Front; Toncho Chakurov and Prodan Stoyanov, heads of departments of the BCP Central Committee; Boycho Shteryanov, first secretary of the Komsomol Central Committee; Subotin Genov, secretary of the Central Council of Bulgarian Trade Unions, members of the NTS Central Council Executive Bureau, ministers, heads of public organizations and creative unions, and union activists.

The following guests were also members of the presidium: Academician Aleksandr Ishlinskiy, hero of socialist labor, Chairman of the All-Union Council of the Scientific and Technical Societies in the Soviet Union; Professor Dr Engineer Manfred Schubert, chairman of the Presidium of the Chamber of Technology, GDR; Dr Engineer (Lekhoslav Grushchinski), deputy chairman of the Main Technical Organization, Poland; Professor Dr Rudolf (Bretshnayder), deputy chairman of the Central Council of the Czechoslovak Scientific and Technical Society; Dr (Gyula Khorgosh), operative chairman of the Federation of Hungarian Scientific and Technical Societies; Professor Dr Engineer Dime Lazarov, chairman of the Presidency of the Union of Engineers and Technicians, Socialist Federal Republic of Yugoslavia; Claude (Kherselen), secretary general of the World Federation of Engineering Organizations; Architect (Pefkios Georgiades), president of the Permanent Conference of Engineers from Southeastern Europe (COPISEE); Engineer Evangelos (Kulubis), president of the Greek Chamber of Technology; (Teoman Yoztyurk), president of the Union of the Chambers of Turkish Engineers and Architects; and John (Khadzantonas), secretary general of the General Technical Council of the Republic of Cyprus.

The congress began its work under the chairmanship of Ivan Shpatov, first deputy chairman of the NTS Central Council. On behalf of those present he expressed warm thanks to Comrade Todor Zhivkov for his participation in the work of the congress and for everything he is doing for the development of the Scientific and Technical Unions. The BCP Central Committee Politburo decision on upgrading the role of the Scientific and Technical Unions in the period of building a developed socialist society in our country was a manifestation of his personal concern and the concern of the party's Central Committee. This decision, the speaker stressed, inspires the delegates to the sixth NTS congress and will be a program for the further active participation of the Scientific and Technical Unions in the acceleration of scientific and technical progress and the building of mature socialism in our dear fatherland, the Bulgarian People's Republic.

After that the participants adopted the agenda.

Agenda:

1. Accountability Report by the Bulgarian NTS Central Council on the period between the fifth and sixth congresses and the forthcoming tasks;
2. Report by the Central Auditing Commission;
3. Draft amendments and supplements to the bylaws of the NTS;
4. Election of a Central Council and a Central Auditing Commission of the NTS.

The delegates also adopted the rule that the congress be held in one day and elected the secretariat for the congress, the mandate commission, the draft resolution commission, the draft bylaws commission, and the conference of delegates.

Those present in the hall honored the memory of union members deceased between the two congresses with a one-minute silence.

Tano Tzolov, BCP Central Committee Politburo member and first deputy chairman of the Council of Ministers, read the greetings of the BCP Central Committee to the sixth congress. The delegates expressed their infinite love and gratitude for the party and its Central Committee and for Todor Zhivkov, the first party and state leader, with long and unfading applause. (greetings published separately).

Those present heard with attention and interest the introductory words by Professor Ivan Popov to the Accountability Report of the NTS Central Council on the activities of the organization between the fifth and sixth NTS congresses. (introductory words published separately).

Professor Dobri Bradistilov, submitted the Accountability Report of the Central Auditing Commission, as its chairman. In the course of its mandate between the fifth and sixth congresses, the commission focused mainly on problems whose solution has contributed to the greatest extent to the implementation of the responsible assignments of the Scientific and Technical Unions: the systematic and rhythmical execution of the revenue and expenditure parts of the budgets adopted by the plenums; the legal and evermore effective utilization of the funds allocated to the union's branches; the conscientious management of union property with an increased feeling of responsibility.

The Central Auditing Commission was guided in its activities by annual and quarterly plans. Periodical investigations were made by the authorities in charge of the execution of the budget and the management of union property. The notes and suggestions of the Central Auditing Commission were met with the understanding and responsiveness of the NTS Central Council Executive Bureau.

The increased financial possibilities created favorable conditions for the development of the overall activities of the NTS and their authorities and organizations. Between the two congresses the percentage of revenues rose faster than of expenditures.

In its report the Central Auditing Commission also noted the positive results of the activities conducted within the accountability period for the expansion and strengthening of NTS material facilities. Currently the country has 12 technology houses while another 8 are under construction. The commission paid particular attention to the condition and utilization of the existing houses. It supervised and assisted the elimination of noted violations.

The Central Auditing Commission must implement its forthcoming tasks in the spirit and requirements of the July BCP Central Committee Plenum, its chairman stated. The role and responsibility of central and okrug auditing authorities will be enhanced. To an ever-greater extent they will become permanent control authorities which will assist on a systematic and planned basis the expedient and legal utilization of material NTS facilities. The Central Auditing Commission must provide methodical guidance to auditing authorities at all levels.

Greetings were presented to the congress by the heads of the delegations of the fraternal socialist countries and the other engineering and scientific and technical organizations.

On behalf of the 8 million-strong army of Soviet scientists and specialists greetings were presented by the head of the Soviet delegation, Hero of Socialist Labor Academician Aleksandr Ishlinskiy, chairman of the All-Union Council of Scientific and Technical Societies. The tempestuous applause with which those present welcomed the speech by Academician Ishlinskiy are the best proof of the love and respect of our scientific and technical intelligentsia for the great Soviet people, the accomplishments of Soviet science and technology, and the constructive peaceful policy of Lenin's party and its Central Committee, headed by the noted peacemaker and internationalist Leonid Il'ich Brezhnev.

Greetings were presented at the congress by the heads of the following delegations: Professor Dr Engineer Manfred Schubert, GDR; Dr Engineer (Lekhoslav Grushchinski), Poland; Dr (Gyula Khorgosh), Hungary; Professor Dr Rudolf (Bretshnayder), Czechoslovakia; and Professor Dr Engineer Dime Lazarov, Yugoslavia. They stressed in their greetings the beneficial influence on the acceleration of scientific and technical progress of the relations and cooperation among related scientific and technical organizations. The further expansion and intensification of creative contacts and of cooperation among organizations and specialists will contribute to new successes in the building of socialism and communism.

Greetings were presented also by Claude (Kherselen), secretary general of the World Federation of Engineering Organizations, and Architect (Pefkios Georgiades), president of the COPISEE. They emphasized the great international prestige of the Bulgarian Scientific and Technical Unions and their role in energizing and strengthening cooperation with all countries in the world in the interest of peace and scientific and technical progress.

Engineer Evangelos (Kulubis), president of the Greek Chamber of Technology, presented greetings on its behalf. John (Khadzantonas), secretary general of the Cypriot General Technical Council and (Teoman Yozyurk), chairman of the Union of Chambers of Turkish Engineers and Architects, also presented greetings (the greetings of the heads of foreign delegations published separately).

At the first congress session statements were made by Engineer Petur Stanev, head of the Technical Progress Sector of the Sliven Okrug BCP committee and Okrug NTS council, and Engineer Ivan Gruev, first deputy minister of forests and forest industry and chairman of the NTS forestry engineering central management.

The following spoke at the second session chaired by Engineer Sava Shivarov, NTS Central Council deputy chairman: Engineer Georgi Dimitrov, deputy director for technical affairs and chairman of the scientific and technical society at the Vazovski Mashinostroitelni Zavodi MK [Machine-Building Plant] in Sopot; Professor Simeon Simeonov, director of TsINTI [Central Institute for Scientific and Technical Information]; Engineer Ivanka Ticheva, NTD [Scientific and Technical Society] at the Sakar Plant, Svilengrad; Subotin Genov, secretary, Central Council of Bulgarian Trade Unions; Engineer Anastasiy Donchev, secretary, Komsomol Central Committee; Professor Lyubomir Zhelyazkov, first deputy chairman, KNTPVO [Committee for Science, Technical Progress, and Higher Education]; Engineer Trifon Pangelov, chairman of the Gabrovo Okrug people's council and NTS council; and Professor Dr Engineer Mikhail Gerasimov, chairman, OTT [Societies for Technical Creativity] Central Council.

Following the conclusion of the second session the delegates to the sixth congress laid wreaths at the Georgi Dimitrov mausoleum, and the grave of Vasil Kolarov.

During the rest periods in the halls of the Party House the discussion on the major and responsible forthcoming tasks of the specialists, union members, went on. In the course of lively talks delegates and guests shared thoughts on the great and happy event: The important party document issued for the first time in the history of the NTS earmarking the ways for the participation of the unions in the upsurge of our scientific and technical and economic development.

Delegates and guests viewed with interest a special exhibit set up at the Party House in honor of the congress. Photographs and diagrams described the creative efforts of union groups, the promotion of cadre skills by the NTS, NTS scientific and technical information, and others. The exhibits were eloquent proof of the development and successes of the union authorities, organizations, and members between the two congresses. Copies of union publications and materials from scientific and technical conferences and symposiums and other measures, published in collections, added to the picture of the rich and varied activities of the unions.

The third congress session was chaired by Corresponding Member Professor Georgi Bliznakov, deputy chairman of the Bulgarian Academy of Sciences and member of the NTS Central Council executive bureau.

On behalf of the Presidium of the Bulgarian Academy of Sciences and, personally, of its chairman, Academician Angel Balevski, he presented greetings to the congress and wishes for its successful work.

The chairman then reported that the congress had received a number of telegrams and reports from scientific and technical societies, okrug councils, ministries, departments, and enterprises, including the National Committee for Bulgarian-Soviet Friendship, Ministry of National Defense, Ministry of Communications, Committee for Television and Radio, and many others, from the entire country. All of them express full approval of and satisfaction with the BCP Central Committee Politburo decision to upgrade the role of the NTS in the period of building a developed socialist society, expressing their confidence in the successful work of the Sixth NTS Congress.

Professor Bliznakov also read in public the telegram of the NTS of the Korean People's Democratic Republic addressed to the congress, stating as follows: "Allow us, dear Comrades, to express our most sincere fraternal and friendly feelings toward you and wish your sixth congress useful creative work. May you achieve even greater successes for which we are happy in advance and which will be to us successes inspiring us in our efforts for the good of the people!"

One after the other the following speakers took the floor: Nikola Todoriev, minister of power supply; Academician Ivan Stefanov, chairman, Sofia City union of economists; Engineer Kiril Dochev, Ruse Okrug BCP committee and NTS council; Academician Kiril Bratanov, chairman, Bulgarian Union of Scientific Workers; Engineer Stefan Buyukliev, NTD chairman, Radio Stations and Television State Enterprise, Sofia; Senior Scientific Associate Dimitur Penchev, general secretary, State Committee for Standardization, and chairman, Central Quality Office; Engineer Georgi Kunchev, deputy chairman, Varna Okrug people's council and deputy chairman, NTS okrug council; Hero of Socialist Labor Stoyan Radev, Dimitrov prize laureate, rationalizer at the Elprom-Energo DSK [State Economic Combine]; Professor Georgi Stefanov, chairman, Central Methods Commission for Cadre Qualification,

NTS Central Council; and Professor Kharalampi Popyordanov, chairman of the NTS Central Management for Mining, Geology, and Metallurgy. (all statements by delegates and guests other than foreign published separately abridged).

Mandate commission Chairman Engineer Mincho Chernev announced that the congress has the necessary quorum and may pass decisions and elect new managing authorities of the Scientific and Technical Unions.

Engineer Ekaterina Marinova, chairman of the sixth congress draft resolution commission, reported the motions and supplements, after which the delegates passed the resolution unanimously.

Along with the motions and supplements reported by Professor Ivan Popov, draft bylaws commission chairman, the delegates unanimously passed amendments and supplements to the bylaws of the Bulgarian Scientific and Technical Unions.

Professor Kharalampi Popyordanov, union awards commission chairman, reported the decision of the 15th NTS Central Committee Plenum awarding titles and awards to distinguished union workers and activists. The title "honorary member" of the Scientific and Technical Unions or of a sectorial union was awarded to 18 people for long and active union activities and in honor of the Sixth NTS Congress (names of honorary NTS members published separately). A total of 98 union activists were awarded the title "deserving worker" of the Scientific and Technical Unions. The gold union badge was presented to 264 activists and the silver badge to 688 union activists. The delegates unanimously ratified the decision of the 15th NTS Central Council Plenum.

This was followed by the election of new managing authorities. A membership of 173 people for the Central Council and of 7 members for the Central Auditing Commission was accepted. (names of Central Council and Central Auditing Commission members published separately).

The participants in the congress sent a letter to the BCP Central Committee read by Professor Vasil Peevski (letter published separately).

The members of the NTS Central Council Executive Bureau and of the central managements of the sectorial unions were elected at the first plenum of the NTS Central Council held immediately afterwards (names of members of the Executive Bureau and central managements published separately).

The floor was taken by reelected NTS Central Council Chairman Professor Ivan Popov. He announced the names of the members of the Central Council, the Executive Bureau, and the central managements of sectorial unions. The delegates expressed their unanimous approval of the choice of new managing authorities with lengthy applause.

Professor Ivan Popov delivered the final speech followed by lengthy applause (speech published separately).

Excited and inspired by the fruitful work of the Sixth Congress of Scientific and Technical Unions--a remarkable event whose decisions marked the beginning of a new stage in the development and advancement of the united creative social organization of specialists in the country--the delegates carried in their hearts its constructive spirit and critical and analytical approach to all union activities, and the resolve to implement the party directives for the further blossoming of our socialist homeland.

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CSO: 2202

BULGARIA

BCP CENTRAL COMMITTEE GREETING TO THE CONGRESS

Sofia TEKHNICHESKO DELO in Bulgarian 19 Mar pp 1, 3

[Greeting of the Bulgarian Communist Party Central Committee to the Sixth Congress of Scientific and Technical Unions]

[Text] Dear Comrades:

The Central Committee of the Bulgarian Communist Party greets you, delegates to the Sixth Congress of Bulgarian Scientific and Technical Unions and worthy representatives of one of the battle detachments of scientific and technical thought most warmly and, through you, all Bulgarian engineers, technicians, agricultural specialists, economists, inventors, and rationalizers--enthusiastic fighters for the building of a developed socialist society in the Bulgarian People's Republic!

Under the people's regime and, particularly, following the historical April Central Committee Plenum, our scientific and technical intelligentsia, closely linked with the people and infinitely loyal to the communist ideals, recorded golden pages in the chronicle of the building of socialism under the guidance of the great Bulgarian Communist Party. Under that period of creative search and active manifestation of the talent and genius of the working class for the implementation of the aspirations and hopes of the people for the renovation of the country and for general prosperity, the Bulgarian Scientific and Technical Unions were the closest assistant of the Bulgarian Communist Party.

Today, from this rostrum, we could proclaim with a feeling of legitimate pride that it would be inconceivable to imagine contemporary socialist Bulgaria without the constructive work and enthusiasm, the flame and dedication of engineers, specialists, innovators, and rationalizers, of the tremendous army of members of the Scientific and Technical Unions, without you, the creators of scientific and technical progress.

The scientific and technical intelligentsia is holding its sixth congress even more closely united around the April party line and the Central Committee, headed by the loyal follower and perpetuator of the cause of Georgi Dimitrov, the tried Leninist and tireless strategist of all-round progress of new Bulgaria, Comrade Todor Zhivkov.

The strategic slogan for the Seventh Five-Year Plan formulated at the 11th congress--reaching high effectiveness and quality in all realms of social life--the established basic directions for the further socioeconomic development of the country, and the resolutions of the July BCP Central Committee Plenum determine the nature and content of the work of the Scientific and Technical Unions. In his report to the congress Comrade Todor Zhivkov defined the Scientific and Technical Unions as "a broad social support in the work for the faster and effective utilization of technological achievements and the dissemination of scientific and technical knowledge."

This stipulation of the 11th congress was specifically manifested in the exceptionally important program decision of the BCP Central Committee Politburo, published yesterday, on upgrading the role of the Scientific and Technical Unions in the period of building a developed socialist society in the Bulgarian People's Republic. This decision confirms, yet once again, the increased role and active organizing and creative efforts of the Scientific and Technical Unions in the implementation of party decisions. It provides a realistic assessment of their contribution to the proper ideological and professional upbringing of the specialists, the mobilization of their efforts and creativity, and the development of a broad rationalization and invention movement aimed at enhancing the technical standard and effectiveness of output and granting their organization even broader rights.

The tasks formulated in the Politburo decision call for improving and upgrading the organizational and training-educational activities of the Scientific and Technical Unions so that they may become even more meaningful, purposeful, and specific. Great attention must be paid to coordinating the work between the Scientific and Technical Unions and the state and other public authorities and organizations heading activities in the line of technical progress.

The inclusion of specialists and innovators in the all-national socialist competition for the fulfillment and overfulfillment of the plans for all indicators, quality indicators above all, must be intensified. Shoulder to shoulder with the trade unions and the Komsomol, the Scientific and Technical Unions must contribute more actively to the creation of an even healthier sociopsychological climate and creative environment in the labor collectives, upgrade the effectiveness of the competition, and work for the development, expansion, and further improvement of the movement for individual creative contributions to the solution of specific production problems. They must increase their participation in state-public reviews of social labor productivity, and to the implementation of the national programs for the effective utilization of material resources, utilization of raw materials, acceleration of the convertibility of working capital, reducing the share of unfinished construction, and rapidly mastering the use of new capacities.

The Politburo decision raises even more emphatically the question of the need for the Scientific and Technical Unions decisively to improve ideological work among the specialists, developing in them high communist virtues, feelings of responsibility and duty, discipline, exactingness, protection of socialist property, professional honor, and collectivism. Particular attention must be paid to the work with young cadres, to their professional and ideological upbringing, and their involvement in material output.

The Scientific and Technical Unions have the permanent duty of clarifying the social and ideological aspects of scientific and technical progress. They must extensively popularize the great opportunities offered by the socialist social system for the development of scientific and technical progress and stress the tremendous successes achieved by our country and the particularly favorable prospects earmarked by the party's policy for the future.

Comrades:

Our party and the Bulgarian people, together with their Soviet brothers and the entire progressive mankind, will celebrate this year the great anniversary--the 60th anniversary of the Great October Socialist Revolution--which marked the beginning of the transition from capitalism to socialism on a worldwide scale. For the past six decades the star of this greatest event of the 20th century is shining on the firmament of our times.

Today, again and again, we express our reverence for the great cause of the October Revolution. Again and again we penetrate into the profound meaning of its transforming force; again and again we realize the historical role of the Leninist party and of the CPSU Central Committee in the contemporary world.

The great significance of the peace program of the CPSU, systematically and steadfastly implemented by the Soviet Union and the fraternal socialist countries, is becoming evermore apparent. The personal contribution of Leonid Il'ich Brezhnev, CPSU Central Committee general secretary, to this great cause is becoming evermore vivid.

To an ever-greater extent we can see the rich results of the fraternal friendship and all-round cooperation and rapprochement with the great Soviet country and of the fruitful participation in the international socialist division of labor, as a result of which the industrious and talented Bulgarian people have achieved considerable successes in their all-round development, and as a result of which the country has assumed a worthy position among economically and technically advanced countries.

One of the most important directions in the activities of the Scientific and Technical Unions must be the further intensified study, mastery, and utilization of scientific and technical achievements of advanced countries

and, above all, of the Soviet Union. The instructions issued by Comrade Todor Zhivkov must become a guiding principle: "We must overcome traditional thinking, traditional limitations; we must dream, plan, and work with the gigantic scale of the scientific and technical revolution, the worldwide international division of labor, the rapprochement with the Soviet Union, and cooperation with the other members of CEMA."

We are happy to have the opportunity to use the inexhaustible arsenal of scientific and technical achievements of Soviet scientists, engineers, and specialists, and their leading experience. Our Scientific and Technical Unions have been called upon to turn even more into reality such excellent opportunities and to organize closest possible cooperation with related Soviet organizations.

The 60th anniversary of the Great October Revolution will trigger new daring accomplishments and successes in the further upsurge of our country and the fastest development of science and technical progress in order to increase the achievements of existing socialism in our country and for the triumph of the great communist truth!

Comrades:

The party's Central Committee called upon the scientists, engineers, economists, specialists, rationalizers, and inventors to engage in adamant and dedicated work for the rhythmical fulfillment and overfulfillment of the plan for all indicators, quality indicators in particular!

We appeal to you to participate most actively in the struggle for the utilization of scientific and technical achievements, the modernization and reconstruction of production capacities, the concentration and specialization based on the multiplication approach, and the enhancement of technological production standards and quality of output!

We appeal to you to give your creative contribution to the most effective and efficient utilization of raw materials, materials, and energy through the elaboration and utilization of new designs and technologies, and the use of scientific outlay norms reflecting the latest achievements of science and technical progress throughout the world!

We call upon you to be in the leading ranks of the movement for the fullest possible utilization of production capacities and the creation of a scientific organization of production, labor, and management which will guarantee the efficient utilization of the working time in enterprises and organizations!

We call upon you to participate most actively in the broad implementation of the main trends of further development and improvement of the territorial and settlement structure of the Bulgarian People's Republic, adopted at the recently held BCP Central Committee Plenum!

Unquestionably, you will meet these assignments with honor and dignity and will contribute to work for the all-round and uninterrupted upsurge of our homeland on the path to socialism and communism!

The BCP Central Committee is confident that in accordance with the requirements of the stage of building a mature socialist society in our country, implementing steadily the new approach to the solution of problems of our socioeconomic development, the Scientific and Technical Unions will remain the stable public support of the party and the state in the field of scientific and technical progress and the dissemination of technical knowledge and will dedicate maximal efforts for their fullest manifestation in the implementation of this highly patriotic project. Our own scientific and technical intelligentsia, tried, and loyal to the ideas of Marxism-Leninism, will continue to dedicate its talent and efforts, with the same inspiration and effectiveness, to the nationwide struggle for building a developed socialist society in our country.

The BCP Central Committee wishes your sixth congress useful work most warmly and new successes to the Bulgarian specialists, inventors, and rationalizers in their noble and dedicated work for the implementation of the great tasks set at the 11th BCP Congress, the fulfillment and over-fulfillment of the Seventh Five-Year Plan, and the blossoming of our dear fatherland--the Bulgarian People's Republic.

5003  
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BULGARIA

SPEECHES DELIVERED BY PROFESSOR POPOV AT CONGRESS

Sofia TEKHNICHESKO DELO in Bulgarian 19 Mar pp 2-3

[Opening speech by Professor Ivan Popov, NTS Central Council chairman, on the Accountability Report to the Sixth NTS Congress]

[Text] Dear Comrade Zhivkov, dear guests, comrade delegates!

At their sixth congress the Scientific and Technical Unions are reporting their comprehensive activities for the time following the 10th BCP Congress in the implementation of its historical decisions. The congress will earmark the new tasks for the implementation of the stipulations of the 11th party congress and the high criteria and requirements formulated at the July 1976 BCP Central Committee Plenum.

The congress is being held in a remarkable period of exceptionally great successes achieved by the socialist countries headed by the great Soviet Union, the successful peaceful policy of the USSR, and the triumph of the Leninist formulation of peaceful coexistence among countries with different social systems. It is taking place on the eve of the 60th anniversary of the Great October Socialist Revolution.

The Sixth Congress of the Scientific and Technical Unions is taking place under the sign of the successful fulfillment of the Sixth Five-Year Plan as a result of which the working people created the material and spiritual prerequisites for the further building of a developed socialist society in our country, under the sign of the tasks of the Seventh Five-Year Plan.

In accordance with the decisions of the 10th party congress, in the period under consideration the main task of the Scientific and Technical Unions was to mobilize the great majority of the engineering and technical, agricultural, and economic cadres, and the inventors and rationalizers for our most effective and creative participation in the broad and fast utilization of scientific and technical progress in Bulgaria and the upgrading of the effectiveness of our economy through the comprehensive mobilization of production capacities, the enhancement of technical standards and the quality of output and services, the maximal and effective utilization of available equipment, and the most effective, profound, and thrifty utilization of material, energy, and manpower resources.

In the course of the implementation of these tasks the Scientific and Technical Unions dedicated considerable efforts and concern to improve and insure the full utilization of their social form of work for active participation in the state-public review of social labor productivity, the participation of the scientific and technical intelligentsia in the nationwide socialist competition and the "Creative Plan and Contribution to the Five-Year Plan" movement, to upgrading the knowledge of the specialists, to the development of technical creativity and activities in the utilization of scientific and technical achievements, to improving scientific and technical conferences, symposiums, and meetings and to upgrading their effectiveness, and activities related to scientific and technical information and propaganda, improvements and expansion of international activities, and others.

The Accountability Report submitted to the sixth congress offers a profound analysis of the work done by the NTS [Scientific and Technical Unions] on the implementation of their main task following the fifth congress. All NTS activities showed a considerable growth compared with the preceding period. A significant factual contribution was made to the solution of problems in the field of material output.

Already over 170,000 union members are participating in the nationwide socialist competition with their individual creative plans, making their contribution to the implementation of important production assignments. In the last three years of the Sixth Five-Year Plan the planned figures for the "Creative Plan and Contribution to the Five-Year Plan" movement were greatly outstripped. Every year, between 1974 and 1976, the Scientific and Technical Unions organized the participation of over 95,000 specialists in all the stages of the state-public review of social labor productivity.

Consulting groups of highly skilled specialists of NTS okrug councils and of the NTD [Scientific and Technical Societies] gave over 21,000 consultations on various problems in the course of the review. Specialists, union members, participated in the formulation of over 41,000 engineering designs and engineering and technical measures, while the NTD sponsored a public discussion of over 22,000 engineering design and engineering-technical measures.

The joint activities of the Scientific and Technical Unions and the state and economic authorities and public organizations related to inventions and rationalizations resulted in savings totaling 712 million leva--over twice the amount reached in the Fifth Five-Year Plan; as a result of the activities of the NTS in the implementation of Council of Ministers decision number 59 about 18,000 scientific and technical collectives saved over 83 million leva. The decisive conversion to the collective form of work was an important result of our activities based on Council of Ministers decision number 59. In addition to economic results, this also had a certain ideological influence on specialists and innovators. Cooperation in scientific and technical creative work strengthened among specialists and

innovators engaged in production work and scientific workers in higher educational institutions, scientific research institutes, bases for development and application, and other scientific research and development units. Major successes were achieved in the period under consideration by the creative collectives which worked on over 19,000 planning, design, technological, and other problems important to the national economy, with achieved and expected savings in excess of 242 million leva.

The traditional activities of the NTS in the field of postgraduate cadre training, already in their 16th year, have grown substantially. In the period under consideration over 42,800 people attended courses for refreshment and advancement of specialist knowledge, sponsored by the NTS; over 800,000 attended shorter training courses. The NTS is developing its cooperation with the Committee for Science, Technical Progress, and Higher Education, the Ministry of Public Education, and the economic ministries and organizations on postgraduate cadre training.

The NTS activities in sponsoring scientific and technical conferences, symposiums, and meetings, tested and rich in traditions, have been of great usefulness to the national economy. A large share of the more than 19,000 measures implemented in the period under consideration dealt with current topics and were of considerable applied practical value. A great percentage of the thousands of suggestions and recommendations adopted at the conference and the symposiums were used by the interested economic ministries, departments, and organizations.

After the fifth congress a system for scientific and technical information was set up at the NTS as a subsystem of the NSNTI [National System for Scientific and Technical Information]; the beginning of an active scientific and technical information system was set up. The country already has 834 NTI [Scientific and Technical Information] public and 161 state-public NTI bureaus. In the period under consideration the rich traditions of the NTS in the field of scientific and technical propaganda were developed: the scientific and technical measures at the Plovdiv International Fair, organization of and participation in exhibits, motion picture and photographic propaganda, foreign science and technology days in our country and Bulgarian science and technology days abroad, lectures and, particularly, specialized scientific and technical lecture propaganda. During that period our international activities and the activities of the scientific and technical sections, committees, councils, and others, of the NTS Central Council and the central managements of sectorial unions, and so on, were developed further.

As a result of the intensified activities of the Scientific and Technical Unions, membership rose after the fifth congress from 206,641 by the end of 1971 to 265,387 currently. Approximately 60 percent of the 450,000 Bulgarian engineering and technical, agricultural, and economic cadres with higher and secondary education are members of the Scientific and Technical Unions. It is precisely they who are the most active and creative segment of these cadres.

In the period under consideration and, particularly, in recent years great efforts were made to link even more directly creative activities with practical work and for linking such activities more closely with production problems. The steady expansion and strengthening of relations and joint work between the NTS and the KNTPVO [Committee for Science, Technical Progress, and Higher Education], and with ministries and other state and economic managements helped a great deal.

The interaction and cooperation among the NTS and the Bulgarian Trade Unions and the Komsomol intensified at all levels, particularly in the fields of socialist competition, development of technical creativity, and rationalization and invention.

Particularly important to us is the positive assessment given by the party of the results of the overall activities of the NTS. It was clearly expressed in the Accountability Report to the 11th party congress by Comrade Todor Zhivkov, first secretary and chairman of the State Council, following his meeting with representatives of the NTS Central Council Executive Bureau, and in the Politburo decision "On Enhancing the Role of the Scientific and Technical Unions in the Period of Building a Developed Socialist Society in the Bulgarian People's Republic," passed only three days ago, a decision which I would consider exceptional and historical in terms of the further development of NTS work.

Such positive assessments at the highest party forums and by the highest party authorities and, personally, by Comrade Todor Zhivkov inspire our union members, specialists, and innovators. They give them a powerful impulse to engage in new creative accomplishments for the implementation of the great stipulations of the Seventh Five-Year Plan.

Comrades:

In the light of the great assignments formulated at the 11th party congress and of the strict requirements of the July BCP Central Committee Plenum, it is particularly important to us now to consider the weaknesses in the activities of the NTS during the period under consideration, to study them, and to earmark measures to surmount them.

We have tried to do this in the Accountability Report to the congress and I believe that we have accurately pointed out the weaknesses allowed. The report provides a critical analysis of all NTS activities during that period.

To sum it up, the main weaknesses allowed in NTS activities have been the following:

First: So far, only about 65 percent of the union membership, or only about 40 percent of all specialists, are actively engaged in creative activities and are resolving creative problems aimed at making an additional contribution to the production process.

Second: The scientific and technical measures implemented during that period, such as scientific and technical conferences, symposiums, post-graduate training courses, specific rationalization plans, exhibits, lectures, and so on, are insufficiently focused on specific scientific and technical problems of our socioeconomic development, as a result of which they are insufficiently effective.

Third: The Scientific and Technical Unions have been involved extremely little in the initial and most important stage of scientific and technical progress: the formulation of forecasts, programs, and plans for the socioeconomic development of the country and, particularly, plans for science and technical progress, plans for the utilization of scientific and technical achievements, and programs for the modernization and full utilization of production capacities and for the effective use of raw materials, materials, and energy.

Fourth: The organizational structure of the NTS is lagging behind the great development of our society on the path to scientific and technical progress. The problems related to this development are complex and the current complex organizational structure with independently operating NTS and insufficient coordination among them constitutes a considerable hindrance to the solution of complex problems.

Fifth: The work of the Scientific and Technical Unions for the communist education of specialists and for the development in them of communist virtues, a new attitude toward labor and socialist property, and a proper attitude toward social and ideological aspects of the contemporary scientific and technical revolution is unsatisfactory.

Such weaknesses were justifiably and even more extensively reflected in the Politburo decision. They apply to all NTS authorities and organizations.

It would be accurate to note, however, that these weaknesses were realized and seen by scientific and technical workers and that most union members worked to surmount them. Efforts in this respect were particularly intensified and acquired a systematic and organized nature following the July BCP Central Committee Plenum and in the period preceding the congress.

However, the 11 November 1977 BCP Central Committee Secretariat decision played the greatest role in this improvement process.

In accordance with the implementation of this decision specific measures were earmarked at the 14th NTS Central Council Plenum. The organizational structure of the NTS was simplified and improved. Today it consists of only two elective collective authorities: the okrug NTS councils and the NTS Central Council. Thus the NTS became a single public creative organization of Bulgarian engineers, technicians, agricultural specialists, economists, inventors, and rationalizers whose branches are the central and okrug sectorial union managements. Single scientific and technical

societies under the okrug NTS councils were set up at enterprises, transportation and construction organizations and units, agroindustrial complexes, and others. Now they will be able to resolve more successfully the complex problems of enterprises and economic organizations and units. The new organizational structure created favorable conditions for decisively improving NTS activities for the comprehensive and highly effective solution of economic problems, for enhancing the role of the NTS as the social base on matters of technical progress, for concentrating their activities on such problems, and for expanding and developing the public principle in our work.

The pre-congress accountability and election campaign and the preparations for the Sixth NTS Congress took place under these circumstances of improved organizational structure, of the strengthening and energizing of scientific and technical societies and okrug NTS councils, the relieving of the central and okrug sectorial union managements from technical, financial, organizational, and other problems, and their focusing on specific problems of sectorial technical progress.

The accountability and election meetings of the NTD and the okrug and Sofia City accountability and election conferences were well prepared and organized, and were held in a spirit of great upsurge, enthusiasm, and great activeness of the delegates. The okrug council reports contained critical analyses of activities. Together with the successes, weaknesses were pointed out quite frankly, and effective measures were earmarked to improve the work.

Good memberships of okrug NTS councils, their bureaus, and managements of sectorial unions were appointed. The other public organizations were represented in them. The decision of the 14th Central Council plenum on improving the organizational structure of the NTS was approved unanimously. The accountability reports and decisions made at the okrug accountability and election conferences were used in the preparations for the Sixth NTS Congress. The congress documents were unanimously approved at the 15th NTS Central Council Plenum.

The okrug BCP committees helped us substantially in preparing for the okrug accountability and election conferences. I would like to point out with a feeling of great gratitude and satisfaction the respect and warm concern displayed by the okrug BCP committees for the NTS and the participation of the first secretaries and, in some okrugs, the entire bureaus of BCP okrug committees in the okrug conferences.

Throughout our activities in the Sixth Five-Year Plan we felt and received close guidance and participation in our work by the BCP Central Committee, for which we express our warm gratitude.

Again now, only three days before our congress, the BCP Central Committee Politburo passed a document of exceptional importance to the overall further activities of the NTS, dealing with the role of the NTS in the stage of building a developed socialist society in Bulgaria.

Even though the Politburo decision is already familiar to the delegates and guests I must share with you the excitement and pride of all NTS members for the warm concern, exceptional trust, and acknowledgment of the responsible role of the scientific and technical and economic cadres in the contemporary scientific and technical revolution and the responsible assignments given the NTS as the active party assistant in the utilization of the achievements of scientific and technical progress in the national economy.

The BCP Central Committee Politburo decision clearly expresses the successes achieved so far by the union authorities and organizations. It indicates our weaknesses and earmarks the major and responsible tasks assigned the NTS in the forthcoming stage of the socioeconomic development of our country.

Allow me to share with you now, Comrades, at least the main aspects of the Politburo decision. They are the following:

First: The enhancement and assertion of the role of the NTS in the stage of building a developed socialist society as the social support of the party and the government in the struggle for the fast and effective utilization of scientific and technical achievements in production, the dissemination of scientific and technical knowledge, the organization and direction of the rationalization and invention movement, and the communist and labor education of the specialists.

Second: The formulation of the basic task of the NTS--to contribute to the full utilization of reserves in our economy by mobilizing the efforts of all engineering-technical and economic cadres, inventors, and rationalizers for the fast and effective utilization of scientific and technical achievements in the national economy, the fulfillment and overfulfillment of production plans, and the enhancement of social labor productivity and economic effectiveness.

Third: The requirement that the NTS actively help the KNTPVO, the State Committee for Planning, and the ministries and economic organizations in shaping the scientific and technical policy of the country, and participate in the formulation of forecasts, long-term, five-year, and annual plans for scientific and technical progress; the NTS okrug councils will gradually take over the functions of public territorial strong points of the KNTPVO. The NTS will become more extensively involved in the discussion of the development of sectors and enterprises.

Fourth: The adoption of effective measures for the strengthening of the scientific and technical societies as single organizations rallying all specialists, rationalizers, and inventors, for upgrading their participation in the comprehensive and effective solution of specific problems facing production enterprises and their gradual assumption of the functions of production and technical councils for scientific and technical and economic matters.

Fifth: The intensification of ideological work by the NTS among specialists in order to promote in them high communist virtues, a creative approach to problems of our scientific and technical development, intolerance toward indifference and ossification; firm elimination of manifestations of technocracy and neglect for the ideological and political content of scientific and technical progress and for decisively improving and expanding activities in the study and application of the scientific and technical achievements and leading experience of the Soviet Union and the other socialist countries.

Sixth: The expansion and improvement of NTS activities in upgrading specialist skills, linking such activities more closely with the plans for upgrading skills drawn up by the KNTPVO, ministries, departments, economic organizations, and higher educational institutions.

Seventh: Also exceptionally important are the tasks which the decision assigns the NTS on introducing a new approach and style in our work. All NTS activities must be imbued with the requirement of high effectiveness and quality and of expanding and improving interaction and cooperation with the authorities and organizations of the Bulgarian Trade Unions and the Komsomol at all levels, the involvement of specialists in the nationwide socialist competition, and so on.

We shall expand and improve the congress resolution by including in it the tasks stemming from the Politburo decision; the new NTS Central Council must elaborate a specific program for their implementation.

However, Comrades, the most important thing now is that following the promulgation of this party document there are no longer any doubts as to the role and place of the NTS in the stage of building a developed socialist society in our country. The tasks and ways governing the future activities of the NTS as an active assistant of the party and the government in the socioeconomic development of our country are extremely clear.

Allow me, Comrades, on your behalf and on behalf of the thousands-strong scientific and technical public, to express to the BCP Central Committee Politburo and, personally, to Comrade Todor Zhivkov our tremendous satisfaction and warmest gratitude for the high trust and exceptional attention and concern displayed for the Scientific and Technical Unions and their 265,000 members.

We assure the BCP Central Committee, the BCP Central Committee Politburo, and Comrade Todor Zhivkov that the engineering-technical, agricultural, and economic cadres, and the inventors and rationalizers, rallied in their single social organization, are strongly united around the BCP and its Central Committee and that they will spare no efforts, time, talent, and creative daring to justify this high trust and implement the slogan of the Seventh Five-Year Plan for effectiveness and quality in the national economy and for the all-round blossoming of our beloved socialist homeland!

Concluding Speech by Professor Ivan Popov, NTS Central Council Chairman, to the Sixth NTS Congress

Dear guests and comrade congress delegate:

Our congress has completed its work. It will leave ineradicable traces in all of us and we can justifiably say that it was a historical congress.

The fact that Comrade Todor Zhivkov, our party's first secretary and State Council chairman personally participated in the work of the congress was to us a great honor and manifestation of great attention.

We were deeply touched by the greeting of the BCP Central Committee read to the congress by Comrade Tano Tsolov.

All this, as well as the BCP Central Committee Politburo decision on enhancing the role of the Scientific and Technical Unions in the period of building a developed socialist society in Bulgaria, issued on the eve of the congress, shows the exceptional attention to and faith in the scientific and technical public and its representatives, in our congress, and in our organization on the part of our party's Central Committee and, personally, of Comrade Todor Zhivkov.

The party Central Committee greeting and the Politburo decisions are to us a broad program for action and documents with a deep content which will constitute an exceptionally valuable guide in our work.

Today our entire people are working dedicatedly and investing their work, talent, and strive to implement the decisions of the 11th BCP Congress and July Central Committee Plenum on the fulfillment and overfulfillment of the Seventh Five-Year Plan. The implementation of this task calls for linking evermore closely the achievements of the scientific and technical revolution with the advantages of the socialist system and the socialist method for social production management.

The high responsibility of the scientific and technical cadres for the development of Bulgarian science and technology and for linking science with production was clearly manifested in the discussion of the Accountability Report and in our congress resolution. All statements displayed great political maturity and proper understanding of the role and place of

the Scientific and Technical Unions as the broad social support of the party and the government in the efforts to apply technical progress faster. Delegates from all strata of the scientific and technical intelligentsia, inventors and rationalizers, and NTS members--scientists, engineers, technicians, workers, and public figures--spoke out. We witnessed the seriousness and depth with which they discussed our union activities and the work in their enterprises, economic organizations, institutes, and establishments. All statements proved the strong solidarity with the NTS Central Council and full agreement with and approval of the new union structure with united scientific and technical societies.

The congress will become part of the history of the Scientific and Technical Unions with its creative atmosphere, and critical and constructive approach to problems and the important decisions which predetermine their activities over a long period of time.

The tasks of our organization and the ways and means for their implementation were considered and discussed extensively and profoundly at the congress. A number of very valuable suggestions were formulated. It would be difficult to add to this profound analysis. Allow me, however, to single out the main things which we must undertake to resolve as of tomorrow, the things which will become the meaning and content of our work over the next five years.

The first necessary condition for upgrading the effectiveness of our work is the fast organizational strengthening of our public creative organization in the spirit of the newly adopted bylaws. We must strengthen rapidly and comprehensively the united scientific and technical societies. We must urgently develop specialized services under the central and okrug councils; the central and okrug managements must undertake to a far greater extent the solution of the problems formulated in the BCP Central Committee Politburo decision.

Our task now is to energize and mobilize the creative efforts of specialists and innovators and to create for them the necessary conditions for their factual contribution to the fulfillment and overfulfillment of the 1977 national economic plan and the five-year plan.

Comrade delegates:

Allow me to express my thanks to all of you who actively participated in the preparations for and work of the congress and wish every one of you happiness and new creative successes.

Let us together express, yet once again, our tremendous gratitude to the BCP Central Committee and, personally, Comrade Zhivkov for their high assessment of our work and the trust expressed in the NTS, and assure them that the NTS will continue to be the loyal assistant of the party and the

government and that our members will dedicate all their forces, knowledge, experience, and creative daring to building a developed socialist society in our dear homeland!

I declare the congress closed.

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BULGARIA

MEMBERS OF SCIENTIFIC-TECHNICAL UNIONS ORGANS LISTED

Sofia TEKHNIЧЕСКО ДЕЛО in Bulgarian 19 Mar 77 pp1,3

[Lists of Members in the various organs of the scientific and technical unions]

[Text] Executive Bureau of the Central Council of the Scientific and Technical Unions:

Chairman: Corresponding Member Professor Ivan Popov

Secretary General: Engineer Ekaterina Marinova

Deputy Chairmen:

Professor Ivan Iliev  
Engineer Sava Shivarov  
Economist Pancho Barkalov  
Engineer Kol'о Kolev

Prof. Eng. Georgi Damyanov  
Candidate of Technical Sciences  
Eng. Emil Zakhariev  
Corresponding Member Professor  
Georgi Bliznakov  
Eng. Khristo Stoyanov

Secretaries:

Engineer Bozhko Arnaudov  
Engineer Ivan Vulchev  
Technician Stefan Andreevski

Eng. Anastasiy Donchev  
Academician Kiril Bratanov  
Eng. Vurban Dzhambov  
Eng. Angel Angelov  
Eng. Dimitur Penchev  
Techn. Khristo Ivanchev

Members:

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Docent Eng. Apostol Pashev  
Prof. Eng. Stefan Popadiin  
Eng. Ivan Gruev  
Prof. Eng. Vladimir Diviziev  
Prof. Eng. Kharalampi Popyordanov  
Agronomist Vasil Tsanov  
Prof. Eng. Dobromir Kolarov

Prof. Mikhail Gerasimov  
Econ. Vasil Tsurvenkov  
Prof. Tsvyatko Petkov  
Eng. Kiril Dochev  
Eng. Georgi Dimitrov  
Eng. Dimitur Petrov

Central Council of the Scientific and Technical Unions:

- |   |                                     |
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| 1. Docent Aleksandur Asenov   | 44. Econ. Dimitur Dikov             |
| 2. Eng. Angel Kirkov  | 45. Prof. Dobromir Kolarov          |
| 3. Eng. Angelina Isenova  | 46. Econ. Dimitur Pravov            |
| 4. Prof. Aleksandur Kvartirnikov  | 47. Econ. Doncho Nikolov            |
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| 7. Eng. Apostol Pashev  | 50. Eng. Dimitur Rulev              |
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| 9. Econ. Atanas Tenchev   | 52. Eng. Danka Georgieva            |
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| 11. Econ. Asparukh Georgiev   | 54. Eng. Delka Khalkhunova          |
| 12. Atanas Popov  | 55. Econ. Dimitur Deliyiski         |
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| 25. Econ. Vasil Tsurvenkov  | 68. Eng. Ivan Ruzhev                |
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| 33. Corr. Member Prof. Georgi<br>Bliznakov                                  | Ignatov                             |
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| 38. Eng. Georgi Kunchev   | 80. Acad. Ivan Stefanov             |
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| 40. Eng. Georgi Gelanov   | 82. Prof. Iliya Gadzhalski          |
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115. Eng. Mariya Dimitrova  
116. Techn. Mincho Vasilev  
117. Lyubomir Khadzhikrustev  
118. Prof. Mincho Popov  
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120. Eng. Marin Tsvetkov  
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122. Prof. Nikola Palagachev  
123. Techn. Nikola Georgiev  
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125. Econ. Nikola Simeonov  
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131. Eng. Petur Minchev  
132. Eng. Petur Obretenov  
133. Eng. Petur Stanev  
134. Eng. Petur Payakov  
135. Eng. Petur Kis'ov  
136. Econ. Petranka Petrova  
137. Eng. Petur Avuzki  
138. Eng. Petur Bogoev  
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140. Prof. Petur Petrov  
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142. Docent Eng. Radi Radev  
143. Econ Rusi Dinev  
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149. Eng. Strakhil Khristov  
150. Slavcho Shopov  
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154. Techn. Stoyan Danchev  
155. Eng. Stancho Nedev  
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160. Eng. Trifon Pangelov  
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165. Eng. Khristo Bonin  
166. Eng. Khristo Paskov  
167. Eng. Khriska Bakova  
168. Eng. Tsveta Gyuleva  
169. Prof. Tsvyatko Khristov  
170. Prof. Tsvyatko Petkov  
171. Prof. Eng. Tsacho Tsachev  
172. Tsvetan Tsenkov  
173. Eng. Shtiliyan Petrov  
174. Eng. Angel Angelov

Central Auditing Commission:

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2. Eng. Dimitur Popov
3. Eng. Dimitur Velchev
4. Techn. Dencho Ivanov
5. Prof. Dobri Bradistilov
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## OPTICAL STORAGE AND METERING RESEARCH IN PROCESS

Budapest MUSZAKI ELET in Hungarian 6 May 77 p 11

[Excerpts] Hungary has been conducting research in the field of optical storage for a number of years, and noteworthy technical results and physical perceptions have been arrived at. According to Jozsef Ronaky, head of the development department of MOM (Hungarian Optical Works), research was conducted through close cooperation between the KFKI (Central Physics Research Institute) and MOM. The goal was thin film investigation of manganese bismuth. The reason for this choice was the particularly good storage capacity of the manganese bismuth and the fact that the desired film can be prepared relatively easily through vacuum vaporization. A special property of the 0.05-micron substance is its so-called single-axis anisotropy-its magnetization is perpendicular to the plane of the substrate. When a laser beam having a diameter of 1-2 microns touches the surface, the thin film heats up locally at that spot. After cooling, magnetization at this spot is reversed. It is in this way that information is inscribed. Access to the information is obtained by scanning the surface with a laser beam of lower intensity. The irradiated points of the surface which have opposite magnetism turn the polarizational plane of the scanning beam into an opposite direction. However, the chief purpose of the investigation was to determine as precisely as possible and to optimize the storage characteristics of manganese bismuth and similar substances. This task called for new kinds of metering approaches since the macroscopic and local magnetic properties, such as the hysteresis curve, magnetization, the domain physics parameters, can not be determined through traditional magnetic methods due to the exceptionally small volume of the substances under investigation.

First a photoelectric device for measuring rotation was devised to permit continuous measurement of the change in the angle of polarization which is proportionate to the magnetization of the domain under investigation. If a thin film is placed into the device and heated above its Curie point or is subjected to the effects of an external magnetic field, the characteristic magnetic curves of the substance transilluminated by a laser beam are readily apparent.

A measuring system for determining local parameters was built also. It consists of laser, modulator, focusable optical unit, support structure for moving the thin film, read-out optics and photoelectric sensor. A variable external magnetic field can be produced at the support structure. Inscriptions

are made at various points on the sample material. It is then possible to determine the size of the domains and size changes produced by the external magnetic field with great accuracy. By this method it is possible to measure—to an accuracy of plus or minus 10 percent—domains having a diameter of 1-2 microns. A change in diameter of as little as one percent can be detected. Since its completion, many types of physical and technical investigations have been carried out with this special equipment. Among other things it was possible to determine the most advantageous laser intensity for inscribing, the proper duration of the laser pulse, the optimal film thickness, the stability of the inscribed domains and the role of the external magnetic field. With the aid of the measuring system it was possible to obtain an unequivocal answer to an important, but still debated question of physics: namely what the laws governing the movement of a domain wall are in a coercitive substance. The series of experiments confirmed the so-called pinning center theory of coercitivity.

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