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THE FIRST ALL-UNION CONFERENCE ON HEAT AND MASS TRANSFER

THE All-Union Conference on Heat and Mass Transfer problems was held in Minsk, B.S.S.R., U.S.S.R., June 5–9, 1961.

The Sponsors of this conference were:

The Academy of Science of the Byelorussian Soviet Socialist Republic,
The Academy of Civil Engineering and Architecture of the U.S.S.R.,
The Ministry of High and Secondary Special Education of the U.S.S.R.,
The Institute of Mechanics of the Academy of Science of the U.S.S.R.,
The Krzhyzhanovsky Power Institute.

The total number of participants was 835. Seven hundred and forty delegates came to the conference on heat and mass transfer from different parts of our country. Among the participants of the conference there were fifteen outstanding scientists who had come from eight foreign countries. One hundred and eight participants of this conference represented different industrial enterprises, 477 were sent by various research and design establishments and 155 by Institutes of Higher Education. Among the delegates there were 79 academicians, professors and doctors; 296 candidates of technical sciences, readers, senior scientific workers; 365 managers of various enterprises, shop managers and engineers. There were nine sections working where more than 300 contributors took an active part.

The President of the Academy of Sciences of the B.S.S.R., Academician of the Academy of Sciences of the B.S.S.R. V. F. Kuprevitch opened the conference. In his speech of welcome the President underlined that the problems of heat and mass transfer, which the conference was to deal with, were of paramount importance for the development of the most significant branches of modern science, and also for the solution of various engineering problems of further technical progress.

The President said: "The fact that such an important conference should be held in Minsk and in the Academy of Science of the B.S.S.R. is a great honour for us, a great tribute to the success achieved by the Institute of Energetics of the Academy of Science of the B.S.S.R., by Academician Alexei Vasilievich Luikov's school in the cause of the development of heat and mass transfer science."

The President expressed his belief that the conference would assist the strengthening of co-operation of Soviet scientists with scientists of other countries, would make a great contribution to the cause of consolidating friendship and co-operation among the peoples and to the cause of peace which was a goal of prime importance for every Soviet citizen.

The President let the Chairman of the Organizing Committee, Academician of the Academy of Sciences of the B.S.S.R., member of the Academy of Civil Engineering and Architecture of the U.S.S.R., Professor Alexei Vasilievitch Luikov have the floor.

In his address Academician A. V. Luikov said: "Processes of heat and mass transfer represent one of the most important branches of modern science and have a great practical significance for new engineering.

In connexion with the intensification of technical processes the transition to high regime parameters, a characteristic peculiarity of heat and mass transfer processes is revealed—their interrelation, i.e. heat and mass transfer of matter is one indivisible complex process. As an example, the classical case of heat transfer between a liquid and the surface of a solid may be given. While at low gas motion velocities and temperatures the heat transfer process may be considered as net transfer, at high velocities and temperatures followed by dissociation of gas molecules, the exchange of heat cannot be

described without taking into account the diffusion process, i.e. without the transfer of mass of the matter.

The so-called porous cooling of a wall exposed to a hypersonic stream of rarefied gas is a problem of extreme importance. In this case the process of heat transfer is solved as a complex heat and mass transfer problem. Generally speaking, when a solid has a capillary–porous surface structure then heat transfer is inseparably linked with mass transfer at any temperature and not only at low temperature and motion velocities of a liquid.

Heat transfer processes in the presence of phase conversions (boiling of liquids, fuel combustion, thermal decomposition, drying) represent by their physical nature one interconnected process of heat and mass transfer.

Interdependence of transfer of various substances takes place not only at heat and mass exchange, but also in the case of net heat transfer, such as combined convective and radiative heat transfer wherein the transfer of radiant energy is connected with the molar motion of a liquid.

Thus, at present, in most cases heat transfer is an indivisible interconnected process of heat and mass transfer. All this has determined both the scope and aims of our meeting, which is the first conference on heat and mass transfer. Sharing of experience on heat and mass transfer study in various thermo-energetic process and modern devices, choosing the most progressive methods of investigation and considering the possibility of applying results obtained in one branch of industry to other branches is the main task of our conference.

Whereas we have essential achievements in the field of engineering—in special sections of heat transfer by convection—(for example, investigations on heat and mass transfer in drying processes), on the other hand investigations on heat and mass transfer are still being carried out by obsolete methods. Suffice it to mention constructional heat engineering where heat and mass transfer investigation methods are still at the level of the beginning of the 20th century. Therefore active participation of specialists in constructional thermo-physics in meetings of this kind will be of great benefit to further development of constructional heat engineering. One can give many examples of unequal application of scientific achievements in heat and mass transfer theory to engineering researches. Now theoretical investigations are known to be of great importance. From this aspect we considered it reasonable to discuss the analytical methods of solution of heat and mass transfer differential equations, experimental methods of determining the thermo-physical properties of bodies under investigation as well as the application of similarity theory methods and thermodynamics of irreversible processes to heat and mass transfer study. Reports to be given at the plenary meetings will reflect the interconnection between the processes of heat and mass transfer, consider certain general methods of investigation, such as the application of thermodynamics of irreversible processes to heat and mass transfer research, as well as the modern state of the similarity theory or the method of generalized variables.

The task of our conference is to outline the main trends of heat and mass transfer progress; to work out proposals on urgent problems of theory, to consider and give recommendations on intensification of a number of technological processes.

The second and, perhaps, the principal task of the conference is to summarize the results obtained in the investigation of heat and mass transfer carried out in various fields of engineering. A number of these papers are published in almost inaccessible scientific editions and therefore it is extremely difficult for one to keep informed.

This conference is only the beginning of this important work which will be followed by the publication of all the reports and their discussions after the end of the conference. Such an encyclopedic publication on heat and mass transfer will be of great value for scientific workers, post-graduates, design engineers and its analysis will enable the thermo-physicist to choose the most reliable investigation method and the most accurate means of calculation.

Bearing this in mind, numerous reports on net heat transfer which are original both for the method of investigation and the results obtained will be heard at the conference.

Leading Soviet scientists and specialists in the heat and mass transfer field will take part in the Conference. I believe those present here are quite familiar with their works. Well known scientists from other countries will also participate in our conference: Professor E. R. G. Eckert (the United States of America), Professor D. B. Spalding (Great Britain), Professor S. R. de Groot (the Netherlands), Professor J. P. Hartnett (the United States of America), Doctor C. Gazley (the United States of America), Professor Werner Jubitz (the German Democratic Republic), Professor U. Grigull (the German Federal Republic), Professor Zdzislaw Ziolkowski (the Polish Peoples' Republic), Professor Shandor Endreny and his colleagues (the Hungarian Peoples' Republic), Doctor A. J. Ede (Great Britain), Doctor Strach and his colleagues (C.S.S.R.).

We highly appreciate their kindness in consenting to make a number of interesting reports at our meeting.

In conclusion I would like on behalf of the Organizing Committee to wish all the participants of our conference fruitful work and active participation in discussions."

II

The following reports were presented to the plenary session in accordance with the programme:

(1) P. K. KONAKOV, On mass and energy transfer, (U.S.S.R.).
(2) E. R. G. ECKERT, A. A. HAYDAY and W. J. MINKOWYCZ, Heat transfer, temperature recovery and skin friction on a flat plate with hydrogen release into a laminar boundary layer, (U.S.A.).
(3) J. P. HARTNETT and CARL GAZLEY, JR., A generalized presentation of mass transfer cooling for laminar flow over a flat plate, (U.S.A.).*
(4) S. S. KUTATELADZE, Heat transfer with boiling, (U.S.S.R.).
(5) D. B. SPALDING, Heat and mass transfer between the gaseous and liquid phases of a binary mixture, (Great Britain).
(6) S. R. DE GROOT, On the thermodynamics of irreversible heat and mass transfer, (Holland).
(7) A. V. LUIKOV, Application of methods of thermodynamics of irreversible processes to investigation of heat and mass transfer in a boundary layer, (U.S.S.R.).*
(8) L. E. KALIKHMAN, Problems of heat transfer in rarefied gases, (U.S.S.R.).

A great number of reports were presented at nine sectional sittings. The list of reports is given in Appendix I.

The work of the sectional sittings was summed up (Appendix II) and the resolution was adopted (Appendix III) at the final plenary sitting of the conference.

All the speakers noted the great importance of the conference for the further development of heat and mass transfer science

On behalf of the visitors from abroad, who were present at the conference, Professor E. R. G. Eckert (U.S.A.) said:

"Academician Luikov, members of the Organizing Committee of this conference, Colleagues, Ladies and Gentlemen.

I would like to use this opportunity to give in the name of the guests to this conference our sincere and heartfelt thanks for the opportunity to participate in the sessions of this meeting. We were all astonished at the large number of topics which were discussed, at the excellence of the papers and at the vigorous and thorough discussions. We would like to congratulate our Soviet colleagues on the excellent quality of the papers which were presented and which demonstrated the large volume of work in heat and mass transfer which is carried out in the Soviet Union.

We all hope that this meeting will be the beginning of an intensified and permanent co-operation of all scientists working in the field of heat and mass transfer regardless of the country in which they live. Thank you very much."

The Chairman of the Organizing Committee of the conference Academician A. V. Luikov closing the meeting said:

* These papers are not included in this special volume as they have already been published in *Int. J. Heat Mass Transfer* 3, No. 3, 198–221 and 167–174 (1961).

"Dear Comrades and Gentlemen.

The scientific conference on problems of heat and mass transfer has come to an end. Its results are summarized at to-day's plenary session. The Organizing committee did its best to ensure a businesslike, creative and fruitful procedure and most favourable conditions for its work.

We note with satisfaction that according to the estimation of most delegates the procedures at the plenary and section meetings were successful. A great number of reports, information and speeches were made and discussed.

One conference, to be sure, cannot solve all the complicated scientific problems in the field of heat and mass transfer.

However, undoubtedly it made a valuable contribution to the development of this field of science, enabled discussion of some outstanding questions, summarized the experience available and outlined further trends of scientific research.

The excellent results of the conference can be accounted for not only by the work of the Organizing committee but mainly by the active participation of the delegates present.

I would like to express my gratitude to all those who delivered reports, gave information and made remarks in discussions, as well as to all commissions, interpreters, the secretariat and to all who promoted the successful procedure of the conference.

I wish to express high gratitude to our guests from other countries taking part in the conference and making for the strengthening of cooperation in science and engineering."

APPENDIX I

List of Reports made at Sectional Sittings of the Conference on Heat and Mass Transfer

Section I. Analytical methods of solution of heat and mass transfer problems

1. I. G. ALYAMOVSKY, The temperature field of a restricted body, having the form of a parallelopipedon, with a continuous heat source.
2. L. M. ALTSHULER, Analytical determination of the temperature field of a tube in a semi-infinite medium.
3. S. I. ANISIMOV and T. L. PERELMAN, Diffusion of charged particles in the presence of recombination.
4. G. P. BOIKOV, On problems of two-dimensional temperature fields.
5. O. S. BERLYAND, The method of solution of a certain heat conduction equation.
6. K. K. VOLKOVA, On a regular thermal regime in bodies with an arbitrary cylindrical form.
7. SH. L. GOLDIN, The stability of stationary regimes of a working medium motion in installations of cooling by evaporation.
8. S. N. DETKOV, On conformal reflections of radiation fields in vacuum.
9. E. I. KIM and B. B. BAIMUKHANOV, Boundary value solutions of the heat conduction equation with an explosive coefficient.
10. E. I. KIM and L. P. IVANOVA, A two-dimensional problem of heat and mass transfer with drying processes.
11. B. I. KOGAN and A. F. KHRUSTALEV, The temperature distribution in an infinite hollow cylinder.
12. V. I. MAKHOVIKOV, Several problems of thermal elasticity applying to a space having an infinite number of cylindrical orifices.
13. G. F. MUCHNIK, Solution of heat conduction problems by the "lattice" method.
14. T. L. PERELMAN, On conjugated problems of heat transfer.
15. G. V. PODDUBNYI, Application of coupled integral equations to the solution of a certain conduction problem.
16. A. A. POMERANTSEV, On the free convection theory.
17. I. G. PORTNOV, Solution of certain problems with phase conversions by the method of operational calculus.
18. L. A. ROTT and N. A. STODOLNIK, Nonlinear equation for diffusion near the stagnation point.
19. L. A. SVERGUNENKO, On the influence of heat conduction on the absorption of sound in crystals having defects.
20. L. M. SIMUNI, A numerical solution of certain problems of liquid motion with a variable viscosity.
21. A. G. TEMKIN, The temperature field of exothermic bodies.

22. V. V. USANOV and G. V. TSIKLAURI, On the analytical determination of effective surfaces in channels in the presence of heat transfer and friction.
23. P. V. TSOI, Analytical solutions of a system of equations of heat and mass transfer for a semi-infinite medium with different boundary conditions.
24. P. V. CHERPAKOV, On the uniqueness of boundary value solutions in the theory of convective heat transfer.
25. V. L. SHEVELKOV, On the determination of the temperature field of materials under thermal treatment.
26. N. G. SHIMKO, The heat conduction problem for uniformly laminated cylinders with contact resistance.
27. P. P. YUSHKOV and L. I. LOGINOV, The numerical method of integration of one system of heat and mass transfer differential equations for the case of variable physical properties.

Section II. Calculation methods and modelling of heat and mass transfer processes

1. G. A. AKSELRUD, Transformation of heat and mass transfer processes in the system "porous body–liquid".
2. V. Y. BORODACHEV, L. M. KULIK and A. K. RUDKO, An approximate solution of the heat conduction equation for uniformly laminated media.
3. L. A. VULIS, I. F. ZHEREBYATIEV and A. T. LUKIYANOV, The solution of non-linear heat conduction equations on statistic electrical integrators.
4. A. N. GORDOV, Non-stationary temperature fields of solids under the conditions of changing heat transfer.
5. U. GRIGULL (G.F.R.), Certain problems of non-stationary heat conduction theory.
6. S. N. DETKOV, Resultant absorptivity and its calculation methods.
7. V. A. DENISOV, The method of solution of heat conduction problems in multilayer solids and its application to the solidification front advancement problem.
8. O. A. DOLGOV, The calculation of non-stationary heat transfer in rocks and freezing columns when shaft designing by a freezing method.
9. L. M. ZYSINA-MOLOZHEN and M. P. POLYAK, The calculation of the temperature field in the body of a cooled turbine blade.
10. A. V. KAVADEROV, Y. A. SAMOILOVICH and V. N. KALUGIN, Laws of heating bodies, having the simplest shapes, by radiation and convection.
11. A. P. KLIMENKO, G. E. KANAVETS, B. V. GAIDUK and E. I. CHERNOBYLSKAYA, The calculation method of the optimum heat exchangers on electron digital computers.
12. N. V. KLIMENTOV, The calculation method of hydrodynamic resistance and heat transfer for jet flowing of unrestricted barrier.
13. L. S. KLYACHKO, Heat and mass transfer both with free and forced convection.
14. L. A. KOZDOBA, Application of the electrical modelling method in ohmic resistance networks for solution of non-stationary thermal conductivity method.
15. L. A. KOZDOBA and V. I. MAKHNENKO, Electrical modelling of temperature fields for welding and soldering of objects having different shapes.
16. L. I. KUDRYASHEV and A. V. TEMNIKOV, The investigation of non-linear problems of non-stationary heat transfer by electrical modelling method.
17. L. I. KUDRYASHEV and V. K. LYAKHOV, Internal problem and heat transfer coefficient calculation method.
18. L. I. KUDRYASHEV and B. N. ASTRELIN, The effect of non-stationary state on heat transfer coefficient of solids of a spherical form in a flow with rather low Reynolds numbers.
19. L. I. KUDRYASHEV and R. N. KITOV, Determination of the universal heat transfer coefficient under the conditions of an external problem with regard to chemical conversions.
20. L. I. KUDRYASHEV and V. P. VESELOV, Investigation of non-stationary heat transfer processes in heat exchangers on electron models with regard to variability of thermal properties.
21. V. M. LYSYANSKY, On mass transfer in the process of extraction out of solid materials.
22. R. M. LADYZHENSKY, Calculation of injector air-coolers.

23. M. M. LITVINOV, V. A. KIRILLOV and OLESHKEVICH, Semi-automatic electro-integrator for solving non-stationary heat conduction problems.
24. A. N. LYAPIN, Turbulent mass transfer of a free stream as hydrodynamic factor determining its shape, kinematics and dynamics.
25. E. I. MOLCHANOV, Application of the hydraulic analogy method to investigation of temperature fields in gas turbine elements.
26. I. R. MIKK, Emissivity of a cylindrical radiating volume.
27. V. I. PSAREV, On calculation of heating and cooling kinetic curves.
28. G. I. PAVLOVSKY, The regularization of thermal processes in steam engines.
29. M. A. PUDOVKIN, A solution of the third linear heat problem with uniformly moving boundary in a semi-infinite area.
30. V. I. RAKHOVSKY, The investigation of non-stationary thermal regime of contacts with heavy current in vacuum.
31. Y. A. SAMOILOVICH, The calculation of rectangular bodies heating to technological conditions.
32. V. S. SEMENOV, Electrical modelling of heat transfer processes in cylinder-piston group of internal combustion engines.
33. V. N. TIMOFEEV, V. M. MALKIN and F. P. SHKLYAR, The theory of regenerative heat exchanger calculation.
34. E. I. TAUBMAN, On calculation method of heat transfer through a wall with an aggregation state change of one or both heat agents.
35. G. V. FILIPPOV and A. I. KU, Some applications of the Loitsyansky method of a boundary layer calculation under conditions of an internal problem.
36. G. N. TRETIYACHENKO and L. V. KRAVCHUK, Methods of "dangerous" temperature fields and evaluation of heat stability of objects made of fragile materials.
37. V. M. STEINBERG, A new method of calculation of the non-stationary temperature field for a semi-infinite non-uniform complex of solids with thermal intercontact.
38. N. A. YARYSHEV, Some problems of heat conduction theory of temperature sensitive elements used for non-stationary temperature measurements.
39. O. I. YAROSHEVICH, Application of hydraulic analogy method to the investigation of heat transfer processes in solids with internal heat sources.

Section III. General heat transfer problems (*No.* 1)

1. A. M. ASATURYAN, V. A. TONKOSHKUROV and V. I. CHERNIKIN, On interaction of heat and hydrodynamic fields in a flow with variable viscosity.
2. L. Y. ARTYUKH, L. A. VULIS, V. P. KASHKAROV and L. P. YARIN, Thermal problems of a boundary layer with heterogeneous and diffusive combustion.
3. K. A. BARLYBAEV, S. V. BUKHMAN, K. A. ZHURGENBAEV and B. P. USTIMENKO, Some problems of convective heat transfer in an incompressible liquid (internal problem).
4. V. P. BAKALEEV, Fusion of a plate of finite thickness.
5. L. A. VULIS, On superimpressing of molecular and molar effects in the transient region of a flow.
6. L. A. VULIS, T. P. LEONT'EVA, I. B. PALATNIK and Z. B. SAKIPOV, Thermal problems of a free-stream turbulent boundary layer.
7. I. P. GINZBURG, On possible solution methods of boundary layer problems with dissociation and diffusion.
8. I. P. GINZBURG, Z. S. GALANOVA and V. G. DEMENTIEV, Solution of laminar boundary layer problems with regard to radiation and absorption of a medium.
9. A. S. GINEVSKY and E. E. SOLADKIN, The effect of the diametrical curvature of a surface on heat transfer rate of axisymmetrical bodies and channels.
10. A. A. GRYAZNOV, On the theory of heat and mass transfer with convective motion of a liquid.
11. A. F. GENDELSMAN, On the determination of friction work with a gas flow in long tubes.
12. S. I. GRIBKOVA and L. S. SHTEMENKO, The experimental investigation of slip and temperature jump with rarefied air flow near a solid wall.
13. N. N. GVOZDKOV and E. P. VAULIN, On heat transfer of a porous plate in a gas flow.

14. E. P. VAULIN, On heat and mass transfer with phase transition "solid–gas" on the surface.
15. A. N. DEVOINO, On certain results of the investigation of heat transfer by a rarefied gas with natural convection.
16. L. M. ZYSINA-MOLOZHEN, Determination of turbulent transfer constants in a compressible gas flow.
17. I. A. ZOTIKOV and L. I. BRONSKY, The experimental investigation of heat transfer with metal fusion and melted metal supply through a porous wall.
18. A. J. EDE (Great Britain), The heat transfer coefficient for flow in a pipe.
19. S. S. KUTATELADZE and A. I. LEONTIEV, Approximate methods of calculation both of heat transfer and friction with turbulent motion of a compressible gas.
20. L. S. KOKOREV, On turbulent diffusion of heat and momentum in a uniform flow.
21. L. I. KUDRYASHEV and I. A. GUSEV, Effect of velocity non-stationary state and unrestricted flow on heat transfer coefficient at flowing of bodies.
22. S. I. KOSTERIN and I. I. YUSHCHENKOVA, Structure and interaction of supersonic vapour streams in vacuum relative to types of vacuum pumps.
23. S. I. KOSTERIN and Y. A. KOSHMAROV, The investigation of flow and heat transfer in a flat supersonic nozzle for a rarefied gas applying to vacuum pumps.
24. Y. V. LAPIN, Mass transfer with turbulent flow of a compressible gas with foreign gas supply.
25. D. I. GYAKHOVSKY, On the distribution of turbulent pulsation rate intensity in streams.
26. S. K. MATVEEV, Determination of heat and mass transfer at the stagnation point of a blunt-nosed body at hypersonic speed.
27. A. A. POMERANTSEV, On the theory of fusion and scorching of a body (the Stephan problem).
28. B. S. PETUKHOV, Heat transfer and hydraulic resistance in tubes with turbulent flow of a liquid with variable physical properties.
29. P. N. ROMANENKO, A. I. LEONTIEV and A. N. OBLIVIN, The investigation of heat transfer and resistance with heated air motion in diffusers and mixers.
30. A. K. REBROV, Heat transfer of a cylinder with free motion of a gas in a rarefied space.
31. V. I. SUBBOTIN, M. K. IBRAGIMOV and E. V. NOMOFILOV, Measurement of the temperature turbulent pulsations in the flow of a liquid.
32. G. A. TIRSKY, Fusion of a solid near the stagnation point in a flat and axisymmetrical gas flow.
33. M. M. FARZTDINOV, On the thickness of dynamic and temperature boundary layers with free convection in hollows.
34. M. M. FARZTDINOV, On a certain method of the Nusselt number determination.
35. Z. P. SHULMAN, An approximate method of investigation of laminar boundary layer equations in an incompressible gas with heat and mass transfer.
37. V. K. SHCHITNIKOV, Influence of body configuration on heat transfer in a forced air flow.
38. V. M. BORISHANSKY and E. D. FEDOROVITCH, Heat transfer of a plate in a flow with a wide range of Reynolds numbers.
39. V. M. BORISHANSKY, N. I. IRASHCHENKO and T. V. ZABLOTSKAYA, Heat transfer calculation for a liquid metal turbulent flow in a tube.
40. I. S. KOCHENOV, V. D. VILENSKY and Y. N. KUZNETSOV, Hydraulic resistance of non-stationary flows.
41. V. B. LEONAS, Experimental investigations of heat transfer in a free-molecular flow regime.

Section IV. General heat transfer problems (No. 2)

1. A. P. BASKAKOV and S. K. KAROCHKINA, Heat transfer between particles of a fine heat agent in a filling.
2. V. A. BAUM, Influence of the mass transfer coefficient on water temperature distribution in the assembly of the water-moderated water-cooled reactor.
3. R. A. BAKHTIOSIN and Z. P. GORBIS, Experimental investigation on heat transfer of flows with dust particles.
4. A. K. BONDAREVA and O. M. TODES, Heat conduction of a boundary layer.
5. V. A. BORISEVICH, Investigation of heat transfer for motion of dispersed material in tubes.

6. A. S. GINZBURG and O. I. ROSLYAKOVA, Heat transfer in the process of radiative-convective baking by infra-red rays.
7. Z. R. GORBIS, On mechanism of heat transfer by two-phase flows "gas–solid particles".
8. G. N. DELYAGIN, Convective heat transfer in a vortex gas flow.
9. N. K. ELUKHIN and O. I. STAROVITSKY, Heat transfer and hydraulic resistance in regenerators with fillings.
10. A. A. ZHUKAUSKAS, V. I. MAKARYAVICHYUS and A. A. SHANCHUYAUSKAS, On heat transfer of a bundle of smooth tubes in cross flow of a liquid.
11. S. S. ZABRODSKY, A fluidized bed as an intensification method of furnace gases cooling.
12. M. G. KAGANER and L. I. GLEBOVA, The effect of various factors on heat transfer through porous materials in vacuum.
13. V. A. KALENDARIYAN and Z. R. GORBIS, Experimental investigation on heat transfer of a longitudinally moving material layer.
14. Y. A. KOSHMAROV and Y. P. FINATIEV, Hydrodynamics and heat transfer of a turbulent gas flow in a radial clearance between concentric rotating cylinders with longitudinal motion of a gas.
15. N. V. KRYLOV, Investigation of "cold bridges" in insulation constructions of deep cooling systems.
16. L. I. ZHEMKOV and L. I. KUDRYASHEV, Application of the generalized theory of thermal regularity to investigation of bond forms between internal and external heat transfer.
17. L. I. KUDRYASHEV and S. V. SHCHIBRAEV, Heat transfer of bodies in a stream.
18. M. D. KUZNETSOV, Expression of experimental data through similarity numbers.
19. M. D. KUZNETSOV and P. O. NOVITSKY, On intensification of heat and mass transfer processes in a boiling layer.
20. A. I. LEONTIEV and V. K. FEDOROV, Application of the local modelling theory to the investigation of heat transfer and resistance with a gas flow in channels.
21. I. M. MASLENNIKOV, Experimental determination of heat radiation properties when heating bodies by radiation in a diathermic medium.
22. N. A. MOROZOV, Certain regularities of the cooling process under conditions of high temperatures and vibrating body motion.
23. V. P. MOTULEVICH, Y. N. PETROV and V. M. EROSHENKO, The effect of electrical fields on convective heat transfer.
24. P. I. POVARNIN, Application of the thermodynamic similarity principles to heat transfer calculations.
25. Y. A. POLYAKOV and S. A. MITKINA, Heat transfer investigation method in a momentary gas dynamic process.
26. V. I. SUBBOTIN, M. K. IBRAGIMOV, M. N. IVANOVSKY, M. N. ARNOL'DOV and E. V. NOMOFILOV, Heat loss and turbulent heat transfer in the flow of liquid metals.
27. V. I. SUBBOTIN, S. P. KANOVSKY and V. I. SIDOROV, Investigation of heat removal by liquid metal coolers on models of flat heat fuel elements.
28. N. I. SYROMYATNIKOV, L. K. VASANOVA and Y. N. SHIMANSKY, Investigation of heat transfer in a boiling layer with internal heat sources.
29. S. S. FILIMONOV and B. A. KHRUSTALEV, Local heat transfer and hydraulic resistance calculation with turbulent motion in tubes with various entrance conditions.
30. CHASHCHIN and N. N. NORKIN, Heat transfer of tubular surfaces with low fins.
31. I. T. SHVETS, E. P. DYBAN, M. V. STRADOMSKY and E. Y. EPIK, Experimental investigation of the flow turbulence influence on heat transfer of air motion in tubes.
32. V. K. SHCHERBAKOV, Peculiarities of heat transfer through a wall with longitudinal fins.
33. G. I. ELKIN and Z. R. GORBIS, On heat transfer in a quartz-sand–gas suspension dragged aerodynamically and mechanically.
34. V. JUBITZ (D.D.R.), Radiative heat transfer and its peculiarities.

Section V. Heat and mass transfer with phase conversions

1. I. Z. ALIMOV, Heat and mass transfer in tubes with vortex motion of a two-phase flow.
2. V. M. BORISHANSKY, Critical loads with boiling and thermodynamic similarity.

3. M. V. BUIKOV, The theory of thermal and diffusion relaxation of an evaporating drop.
4. M. P. VOLAROVICH, Investigation of heat and mass transfer by radioactive indicators.
5. I. P. VISHNEV, On the effect of vapour content on heat transfer of boiling in tubes.
6. L. N. GRIGOROVICH, Heat transfer investigation with boiling of binary mixtures.
7. A. A. KOMAROVSKY and V. V. STRELTSOV, Superposition of natural convection on forced one with mass transfer in a flow of liquid through an immovable granular layer.
8. A. P. KLIMENKO, G. E. KANAVETS, B. V. GAIDUK and S. I. CHESNOBYLSKAYA, More accurate design of heat exchangers.
9. S. A. KOVALEV, Certain laws of heat transfer with film boiling in a volume.
10. L. E. MIKHAILOV, Investigation of heat removal crisis for forced motion of ethyl alcohol in a circular channel.
11. P. A. MASLICHENKO, Data on film boiling mechanism in a great volume of liquid.
12. Z. L. MIROPOLSKY, Stagnation heat flows with water boiling in channels.
13. I. L. MOSTINSKY, Application of the law of corresponding states to heat transfer calculation with boiling of a liquid.
14. M. E. IVANOV, On calculation variation of parameters of heat and mass transfer finite process both with condensation from "vapour–gas" mixture and evaporation into it.
15. P. A. NOVIKOV, The effect of body motion rate on heat transfer and mass transfer in vacuum.
16. P. I. POVARNIN, Application of the thermodynamic similarity method to calculation of a liquid surface tension.
17. P. I. POVARNIN, Generalization of data on boiling crisis with temperature of a water flow in tubes below the saturation one.
18. N. A. POPOV and V. I. RAKHOVSKY, On the impoverishment of metal ceramics by highly volatile components when heating in vacuum.
19. I. I. PALEEV and F. A. AGAFONOVA, Heat transfer between walls and a gas flow with drops of an evaporated liquid.
20. O. V. REMIZOV, Effect of the channel geometry on the critical heating with forced water flow.
21. K. I. REZNIKOVICH, Heat and mass transfer on tubes with spiral fins.
22. N. U. RIZAEV, Investigation of mass transfer process in "solid body–liquid" systems.
23. N. G. STYUSHIN, New results on heat transfer investigation with surface boiling.
24. V. P. SKRIPOV, Boiling crisis and thermodynamic stability of a liquid.
25. G. T. SERGEEV, Interinfluence of heat and mass transfer processes with evaporation.
26. G. A. TIRSKY, Sublimation of a body near the stagnation point in flat and axisymmetrical gas flows.
27. V. I. TOLUBINSKY, Rate of vapour bubble growth with liquid boiling.
28. N. E. HAZANOVA, Diffusion in gases near the stagnation point of "liquid–vapour" equilibrium.
29. N. E. HAZANOVA, Diffusion in gases at high pressures.
30. K. P. SHUMSKY, On the theory of phase conversions in vacuum.
31. I. SCHNELLER (Czechoslovakia), Some problems of heat and mass transfer studies in the National Research Institute of Heat Engineering in Prague.
32. I. T. ELPERIN, Intensification of heat transfer between a gas and solid surface by an intermediate liquid coolant.
33. I. T. ELPERIN, Investigation of transfer processes in "counter" flows.

Section VI. Heat and mass transfer with chemical conversions

1. L. S. AKSELROD, On liquid-phase mass transfer on bubbling column plates.
2. A. G. BELKIN and Y. N. SULOEV, On heat transfer problem in block polymerization processes.
3. G. V. VASYUNINA and L. S. AKSELROD, Determination of the useful life of air separator freezers.
4. R. G. VALDEK and N. L. LUTSKOVSKAYA, On heat of organic substance decomposition in Estonian combustion shell.
5. N. I. GELPERIN and V. B. KVASHA, Determination and maintenance of an optimum temperature field in chemical reactors.

6. G. N. DELYAGIN and B. V. KANTOROVICH, Mass transfer in the process of fuel combustion in a flow.
7. V. V. DILMAN and V. R. KUCHINSKY, Intensification of mass transfer in the cross flow of a gas and liquid.
8. V. I. DANILKIN and V. E. HARTSEV, Heat and mass transfer under non-isothermal conditions.
9. Y. I. DYTNERSKY, Mass transfer processes in plate columns.
10. F. F. ZIGMUND, On design of crystallizers with air cooling.
11. L. I. KOMAROVA, Natural convective heat transfer with chemical reactors.
12. B. V. KANTOROVICH, Heat and mass transfer in a fuel combustion process.
13. K. L. LEONOVICH, Aerodynamic means of intensifying heterogeneous processes.
14. I. L. LUBOSHITS, Deep drying of milling peat and its low-temperature carbonization in a falling bed with external heating.
15. V. P. MOTULEVICH, Convective heat transfer in the presence of non-equilibrium chemical reactors.
16. I. M. NAIDICH, A. S. DZHAMANBAEV and V. S. GREBENNIKOV, Effect of carbon heating on its thermal decomposition process.
17. G. A. OSTROUMOV, Hydrodynamic explanation of electrical properties of insulating liquids.
18. R. S. PRASILOV, Dynamics of volatile ash deposition on screen heating surfaces of industrial furnaces.
19. I. S. PAVLUSHENKO, L. N. BRAGINSKY, N. N. SMIRNOV and P. G. ROMANKOV, Influence of mechanical mixing on mass transfer processes with chemical conversions.
20. I. I. PALEEV, B. D. KATSNELSON and A. A. TARAKANOVSKY, Study of heat and mass transfer between a particle and pulsating medium by the diffusion method.
21. S. M. RIPS, The study of liquid oxygen gasification process by thermodynamic methods.
22. S. M. REPRINTSEVA, Thermal decomposition process of milling peat in a falling bed with external heating of a reactor.
23. A. V. RALKO, Heat and mass transfer at baking of clays and caolins.
24. N. P. SLOBODNYAK, Analysis of chemical sorption in filling columns by a new method.
25. R. SH. SAFIN, N. M. ZHAVORONKOV and A. M. NIKOLAEV, The study of physical absorption and chemisorption processes in an apparatus of a rotational type.
26. E. K. CHEKALIN, Experimental investigation of turbulent flame propagation process in a flow of pulverized liquid fuel.
27. Y. A. FINAEV, Volatile release process with burning of peat particles.

Section VII. Heat and mass transfer with drying processes

1. O. A. BURIN, Intensification of convective and conductive drying of textiles by nozzle blowing.
2. A. S. GINZBURG, Modern problems of grain drying.
3. E. I. GUIGO and E. S. KOUKHCHSHVILI, Some theoretical principles of high efficiency sublimation condensator design.
4. V. I. ZHIDKO, Investigation of grain drying in a boiling layer.
5. P. I. ZUBOV and L. A. LEPILKINA, The study of internal tensions in polymer coatings.
6. M. F. KAZANSKY, P. P. LUSTIK and V. N. OLEINIKOV, Influence of moisture on non-stationary heat and mass transfer in capillary-porous bodies.
7. V. V. KRASNIKOV and V. A. DANILOV, Heat and mass transfer in the process of combined drying both by convection and conduction.
8. V. G. KARPENKO, Heat and mass transfer at drying and grinding of brown coal.
9. O. A. KREMNEV, V. R. BOROVSKY and A. A. DOLINSKY, Pulverizing evaporative-drying method of dehydrating solutions with high moisture content.
10. G. S. KONOKOTIN, Heat and mass transfer with freezing of fish.
11. I. V. KRECHETOV, *I–d* diagram change.
12. P. D. LEBEDEV and B. I. LEONCHIK, Drying of superheated solutions by pulverization.
13. I. L. LUBOSHITS, Grain drying in a pneumo-gas dryer with an oscillating regime.
14. G. A. MAKSIMOV, Hydroscopic properties of capillary-porous materials for various modes of drying.

15. Y. A. MIKHAILOV, Molar-molecular heat and mass transfer for moist material drying.
16. L. P. PAVLOVSKY, Some peculiarities of lake and colour coating by infra-red rays.
17. V. N. PRAVDIN and A. N. USPENSKY, Experimental investigation of heat and mass transfer of the ribbon-coating machine.
18. G. D. RABINOVICH, Heat and mass transfer in a grain layer.
19. B. S. SAZHIN, Drying of paste-type materials on a roll-ribbon dryer.
20. B. S. SAZHIN, Loose material drying and development of aero-fountain dryer rational scheme.
21. P. T. SMENKOVSKAYA, External heat and mass transfer of food stuffs drying by sublimation in vacuum.
22. A. F. SOROKIN and Y. K. KOPTELEV, Radiative-convective pulsation dryer of belted cable MKSB isolation.
23. G. S. SHUBIN, Experimental investigations of heat and mass transfer with highly turbulent convective drying of flat wood materials.
24. A. ENDRÉNYI (Hungarian People's Republic), Heat and mass transfer in the hydroscopic phase of drying under convective and conductive heat flow.

Section VIII. Heat and mass transfer in the production of building materials and building construction

1. V. BARNAUSKAS and I. SABALYAUSKAS, Evaluation method of the cellular concrete fatigue due to energy of outside climate.
2. Y. P. BARSKY, Stoneware baking process thermophysical parameters and the optimum baking temperature curve determination.
3. M. S. BELOPOLSKY, Optimum drying regime determination of plastic moulding stonewares.
4. E. Y. BRAININA and T. S. KARANFILOV, Investigation of heat and mass transfer in protecting the construction of buildings and in blocks by visualization and modelling.
5. M. A. BUZ, Heat and mass transfer of effective uranic stones at high coolant rates.
6. A. P. VASKOVSKY, Maintenance of definite temperature and humidity of air inside premises and stone walls in the Arctic.
7. K. P. VISHNEVSKY, Calculation of heat transfer in a granular material layer.
8. G. N. DANILOVA and S. N. BOGDANOV, Determination of thermophysical properties of certain concretes and gravels applied to concrete dam constructions.
9. E. P. EREMENOK, Influence of cement exothermal reaction on temperature field formation in concrete.
10. I. N. ZAIKA, Temperature control investigation of ceramics in constructions.
11. V. V. KOTELNIKOV, Investigation of building construction thermal engineering properties under scientific conditions.
12. O. A. KREMNEV, V. P. BOROVSKY and I. M. PIEVSKY, Investigation and experience of intensification of gypsum blocks and plank drying processes.
13. I. S. MELNIKOVA, Heat and mass transfer on protecting construction surfaces.
14. M. L. MIKHELSON, Kinetics of ventilation air heating at temperature below 0°C by latent heat release due to pulverized water freezing.
15. G. V. PODDUBNY, Heat transfer in the ground under the insulation of a refrigerator without a base.
16. M. Y. ROITMAN, On application of the nonstationary heat transfer theory to building construction refractivity calculation.
17. B. N. SREBNITSKY, Investigation of heat transfer in a hydroair heater with an irrigative nozzle.
18. K. S. STRELKOVA, Determination of temperature on the inner surface of panel joints by calculation methods.
19. S. L. FRID, Basic heat transfer problems arising from the design of large-scale hydrotechnical constructions.

Section IX. Thermal properties of various materials and coolants and methods of their determination

1. P. G. ALEKSEEV, Complex determination of thermal properties of polymers and investi-

gation of their dependence on temperature and pressure.
2. K. I. AMIRKHANOV, A. P. ADAMOV and L. N. LEVINA, Thermal conductivity of carbon dioxide along the boundary curve including the area of critical state.
3. Y. P. BARSKY, A non-stationary heat flow measurement and new methods of thermal properties investigation.
4. Y. P. BARSKY, Thermal analysis as a method of investigation of heat and mass transfer with phase conversion.
5. L. A. BROVKIN, On possible reasons for the effect of measured heat content increase of certain insulated bodies.
6. Y. D. BASILEVSKAYA, Binary mixture diffusion coefficients of certain hydrocarbons and air.
7. A. V. VERZHINSKAYA, The method of constant energy source.
8. V. F. VYSHENSKAYA and N. D. KOSOV, Investigation of temperature dependence of gas diffusion coefficient.
9. D. I. GREMILOV, High temperature method of direct determination of heat transfer coefficient.
10. V. A. GRUZDEV, The differential method of hydrostatic weighing to measure molten metal densities.
11. V. M. GUMENYUK, V. S. IVANOV and V. V. LEBEDEV, Determination of thermal conductivity of metals at temperature above 1000°C.
12. V. A. GRISHIN, Heat measurements by the method of current thermal compensation and some results of comparison.
13. G. N. DULNEV, Modern state of the instrument making industry in the field of thermal measurements.
14. I. Y. ZALKIND, A device determining heat flows from heated surfaces with temperatures up to 150°C.
15. Y. ZEMANEK (Czechoslovakia), Investigation of physical properties of liquids.
16. V. A. KALENDARYAN, R. A. BAKHTIOZIN and Z. R. GORBIS, Thermophysical properties of synthetic graphite particles.
17. Y. A. KIRICHENKO, Determination of thermal coefficients by the method of radial temperature waves.
18. N. D. KOSOV and O. V. RIVIN, On a new type of calorimeter for thermal constant determination.
19. A. A. KONKOV and V. P. IONOV, Spectral properties of certain gases at high temperatures.
20. M. V. KULAKOV, A method and instruments for a complex determination of thermal coefficients.
21. E. V. KUDRYAVTSEV and K. N. CHAKALEV, Standardization of heat flow.
22. R. E. KRZHIZHANOVSKY, Influence of thermal treatment on thermal and electrical conductivities of heat resistant alloys.
23. E. R. KRZHIZHANOVSKY, General laws in electric conductivity behaviour of metals and alloys.
24. I. S. LISKER, Non-stationary methods for determining thermal properties of semiconductors.
25. N. N. MEDVEDEV, Temperature hysteresis.
26. E. A. MITKINA, Determination of thermal capacity.
27. I. I. MORACHEVSKY, B. E. SPEKTOR and V. I. RYAZANTSEV, Method and instrument for the determination of thermal properties of materials without testing.
28. G. E. OZHIGOV, Low inertia thermo-column for investigation of heat transfer by radiation.
29. B. P. PASHAEV, Change of thermal conductivity of some metals and alloys on melting.
30. V. I. PETROVICHEV and L. S. KOKOREV, A new non-stationary method of heat transfer coefficient measurement.
31. R. S. PRASOLOV, Materials with superlow heat conduction and calculation of gas thermal conductivity and density in fine-porous materials and rarefication.
32. E. S. PLATUNOV, Apparatus for thermophysical tests developed at the Leningrad Institute of Precise Mechanics and Optics.
33. P. E. SUETIN, Measurement of gas reciprocal diffusion coefficient by optical methods.
34. G. N. TRETYACHENKO and L. V. KRAVCHUK, High temperature thermophysical properties determination methods.
35. A. F. CHUDNOVSKY, Determination method of semiconductor thermophysical properties.

APPENDIX II

The Account of Sectional Procedure on Heat and Mass Transfer

The procedure of the Conference on Heat and Mass Transfer was carried out according to the programme. Eight hundred and thirty-five participants were organized in nine sections.

In their resolutions the participants emphasized both the great importance of the problems considered in the reports delivered and the high level of theoretical and experimental investigation.

The discussions were active and fruitful. Altogether three hundred and fifty participants took part in discussions at sectional sittings.

The sectional work was as follows:

Section I: Twenty-seven communications and reports were delivered. They were mostly devoted to problems on heat conduction, boundary layer theory, thermo-elasticity phenomena, numerical methods of the solution of problems.

Section II: Thirty-seven reports and communications were made which reflected the following principal problems:

(1) Development of calculation methods of heat distribution for non-stationary heat conduction;
(2) Development of electronic computing devices for the solution of heat and mass transfer problems;
(3) Improvement of methods of calculation of heat exchange apparatus.

Sections III and IV: Seventy-eight reports and communications were made where the following problems were considered:

(1) The boundary layer theory and its application to solving problems on heat and mass transfer in non-homogeneous media;
(2) Phenomenon of fusion and sublimation of bodies moving in supersonic flows;
(3) The theory of turbulent motion of a liquid;
(4) Heat transfer in rarefied gases and metals.

Section V: Thirty-seven reports and communications were delivered. The basic problems considered were as follows:

(1) Heat transfer with boiling in a wide range of pressures up to critical and in a region of high heat stresses;
(2) Heat and mass transfer with phase conversions;
(3) Certain problems on heat and mass transfer at evaporization.

Section VI: Twenty-three reports and communications were made. They dealt with problems on heat and mass transfer of fuel combustion in a flow, for intensification of heat and mass transfer processes with chemical conversions, thermal decomposition of solid fuel, etc.

Section VII: Twenty-four reports and communications were made. The basic problems considered were as follows:

(1) Application of the thermodynamic method to analysing and calculating drying processes;
(2) Investigation into physical properties of materials depending on the form of the bond of moisture with the material;
(3) Investigation into grain drying;
(4) Various drying methods: infra-red, convective–conductive, pulverization, sublimation, etc.

Section VIII: Twenty-one reports and communications were delivered. The basic problems considered were the following:

(1) Heat and mass transfer in protecting building constructions;
(2) Drying of building materials;
(3) Determination of thermophysical properties.

Section IX: Thirty-seven reports and communications were made where the following problems were considered:

(1) Determination methods of thermophysical properties of various materials and heat agents;
(2) Devices for determining thermophysical properties of materials, diffusion coefficient and other parameters.

The main suggestions proposed in the sections were reflected in the resolution of the Conference which was distributed among the participants of the Conference on Heat and Mass Transfer.

APPENDIX III

The Resolution Adopted at the Conference on Heat and Mass Transfer Held in Minsk, June 5–9, 1961

One of the basic trends of scientific and engineering progress which paves the way for the successful fulfillment of the Seven-Year Plan of growth of the National Economy of the U.S.S.R. is the creation of equipment which will prove to be perfect, highly productive, economical and reliable in operation. A great number of machines, apparatus and installations are working with the application of various technological processes involving heat and mass transfer. Creation and exploitation of this equipment are based on results of scientific achievements in the field of thermophysics.

The main problem in the modern science of heat and mass transfer is the continuation of the detailed study of problems which will reveal both the physical nature of the mechanism and laws of energy and matter transfer.

The development of such branches of science as thermodynamics of irreversible processes, the theory of turbulent motion of non-isothermal, non-uniform flows, the theory of non-equilibrium processes, the theory of motion of multiphase, multicomponent systems with discrete elements as well as the development of methods of determining and obtaining experimental data on physical properties of substances at extremely high temperatures, pressures and concentrations shows the great need to have these problems successfully solved.

Considerable successes achieved in the sphere of studying heat and mass transfer processes are acknowledged by the Conference. The great number of participants who attended this Conference and the considerable number of papers presented are indicative of this.

At the same time certain disconnection, insufficient co-ordination and exchange of investigation results, especially among the industrial establishments, is noted by the Conference.

As a result of discussions on reports and communications, the total number of which was three hundred, and in accordance with subsequent discussions the Conference considers that it is advisable to outline the following principal trends in the field of scientific investigation of heat and mass transfer:

(1) To continue the further development both of analytical and experimental methods of heat and mass transfer study on the basis of thermodynamics of irreversible processes; the theory of boundary layers; statistical physics; the theory of non-equilibrium processes and similarity theory.

(2) To extend a number of works dealing with the field of the theory of turbulent motion of non-isothermal, non-uniform flows; the theory of motion of multiphase and multicomponent systems with discrete elements; heat transfer in rarefied media and heat transfer intensification by intermediate liquids and fine-grained solid coolants.

(3) Taking into account the wide application of heat and mass transfer processes with phase conversions, the development of further investigation of boiling processes with high parameters and heat loads, those of evaporation under various conditions as well as with other phase and chemical conversions; and those of boiling of multicomponent solutions, should be considered necessary.

(4) To continue the further development of the theory in the field of heat and mass transfer in drying processes on the basis of the classical thermodynamics and thermodynamics of irreversible processes; as well as on the basis of analytical methods of solving problems on non-stationary heat and mass conduction; the investigation of bond forms of moisture with a material; and on a wide application of similarity theory.

(5) The development of new highly intensive drying methods ensuring a very high quality of materials as well as the clarification of optimal drying processes should be considered the most important problem in the field of theory and practice of drying.

The following is recommended:

(6) When investigating heat and mass transfer processes with chemical conversions to apply on a larger scale up-to-date methods

of investigation including modelling of separate stages of a process and installations as a whole.

(7) When solving the problems of constructional thermophysics to utilize modern achievements in the field of heat and mass transfer more widely for production of building materials and in building construction.

(8) To develop new methods of determining thermophysical characteristics of various materials giving particular attention to obtaining data in the region of high temperature.

To overcome successfully the problems raised the Conference considers that it is necessary to carry out the following practical measures:

(1) To call regular meetings and conferences both on general problems of heat and mass transfer and on separate problems with invitation of foreign scientists to such meetings;

(2) To organize a co-ordinational centre bound up with the Scientific Research Co-ordination Committee, attached to the Council of Ministers of the U.S.S.R. to co-ordinate all the investigations into heat and mass transfer;

(3) To apply to the Ministry of Higher and Secondary Special Education of the U.S.S.R. to consider the question of organization of heat and mass transfer laboratories in leading Institutes of Higher Education in our country;

(4) To apply to the Ministry of Higher and Secondary Special Education of the U.S.S.R. to make provision in curriculums for some thermotechnical specialization, the substitution of heat conduction courses for the heat and mass transfer course and to announce a competition for new textbooks for this course for main specialities;

(5) To apply to the Minister of Higher and Secondary Special Education of the U.S.S.R. to establish chairs of constructional thermophysics in Institutes of Civil Engineering;

(6) To apply to the Ministry of Higher and Secondary Special Education of the U.S.S.R. to establish additional financial support for the Journal of Engineering Physics and to change it into the organ of the Academy of Science of the B.S.S.R. and of the Ministry of Higher and Secondary Special Education of the U.S.S.R. To consider whether it is advisable to rename the Journal of Engineering Physics as the Journal of Engineering Thermophysics;

(7) To apply to the State Energetics Publishing House to increase the number of publications on heat and mass transfer problems.

(8) The Conference considers that it is necessary to carry out the work required to establish a standard system of terminology and symbols used in the field of heat and mass transfer;

(9) To apply to the Academy of Science of the B.S.S.R. to publish the proceedings of the present Conference.

The Conference highly appreciates the enormous preliminary work carried out by the Institute of Energetics of the Academy of Science of the B.S.S.R., by the Organization Committee and by the Chairman of the Organization Committee of the Conference, Academician A. V. Luikov.