

## HEAT AND MASS TRANSFER BIBLIOGRAPHY—SOVIET WORKS

O. G. MARTYNENKO

Heat and Mass Transfer Institute, BSSR Academy of Sciences, Minsk, BSSR, U.S.S.R.

(Received 10 November 1974)

### BOOKS

- G. N. Abramovich (editor), *Turbulent Mixing of Gas Jets*. Nauka, Moscow (1974).  
L. I. Adigezalov and A. S. Shvarts, *Intensification Methods of Shoe Drying*. Legkaya Industriya, Moscow (1974).  
V. E. Alemasov et al., *Thermodynamic and Thermophysical Properties of Combustion Products. Handbook Vol. 8. Fluorine Oxidant Fuels* (edited by V. P. Glushko). VINITI, Moscow (1974).  
O. N. Bryukhanov and A. G. Blokh (editors), *Radiant Heat Transfer Methods and Instruments for Investigation of Radiant Heat Transfer*. Kaliningrad (1974).  
A. V. Chernov, *Fundamentals of Heat Transfer*. Penza (1974). *Collected Papers on Aerohydrodynamics*. TsAGI, Moscow (1974).  
M. E. Deich and G. V. Tsiklauri, *Elements of Magnetic Gas Dynamics* (edited by V. V. Frolov). Moscow (1974).  
V. G. Fedorov, *Thermometry in Food Industry*. Pishchev. Prom., Moscow (1974).  
V. V. Fedorov et al. (editors), *Calculation Methods of Thermophysical Properties of Gases and Liquids*. Khimiya, Moscow (1974).  
S. G. Galaktionov, G. V. Nikiforovich and T. L. Perel'man, *Diffusion in Complex Molecular Structures* (edited by T. L. Perel'man). Nauka i Tekhnika, Minsk (1974).  
I. P. Ginzburg and Yu. P. Saveliev, *Boundary Layer of a Gas Mixture*. Textbook, Leningrad (1974).  
P. M. Kolesnikov, *Energy Transport in Non-Homogeneous Media. Mathematical Theory* (edited by A. V. Luikov). Nauka i Tekhnika, Minsk (1974).  
A. V. Luikov (editor), *Heat and Mass Transfer 10(2). Discussion Materials at the Fourth All-Union Heat and Mass Transfer Conference*. Minsk (1974).  
E. I. Nesis (editor), *Investigations on Boiling Physics*. Collected Papers 2. Stavropol (1974).  
L. S. Polak (editor), *Modelling and Calculation Methods of Physico-Chemical Processes in Low-Temperature Plasma*. Nauka, Moscow (1974).  
B. S. Sazhin, L. M. Kochetov and V. P. Osinsky, *Fluidized Bed Dryers with Mechanical Boosters*. TsINTikhimneftemash, Moscow (1974).  
G. M. Serykh et al. (editors), *Thermodynamics and Heat and Mass Transfer in Heterogenous Systems*. Collected Papers, Krasnodar (1973).  
P. A. Shankin and L. I. Gudim, *Flow of Pseudoplastic Liquids*. MTI, Moscow (1974).  
N. N. Yanenko (editor), *Numerical Methods of Continuum Mechanics. Collected Papers*, 5(1). Novosibirsk (1974).  
N. I. Zhirnov and V. I. Lebedev (editors), *Problems on Heat Transfer and Designing of Heat Supply Sources. Collected Papers*. Moscow (1974).  
M. F. Zhukov (editor), *Problems of Thermophysics and Physical Hydrodynamics. Collected Papers*. Nauka, Novosibirsk (1974).  
T. A. Germogenova and N. V. Konovalov, Asymptotic characteristics of the transfer equation solution for a non-homogeneous medium, *Zh. Vychisl. Mat. Mat. Fiz.* 14(4), 928–946 (1974).

M. N. Markova, Seminar on "Theoretical fundamentals of chemical technology" (Chronicle), *Teoret. Osnovy Tekh.* 8(5), 800–804 (1974).

### THERMODYNAMICS

- Yu. T. Akramkhodzhaev, N. R. Yusupbekov and Z. Salimov, Thermodynamic characteristics of cotton groats, *Izv. Vuzov. Pishchev. Tekh.* No. 4, 161–162 (1974).  
A. A. Aleksandrov and T. S. Khasanshin, A state equation and table of thermodynamic properties of heavy water in a liquid phase, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 96–101 (1974).  
I. T. Bakhareva and A. A. Biryukov, Stochastic interpretation of the equations of non-linear non-equilibrium thermodynamics, *Zh. Fiz. Khim.* 48(8), 1959–1964 (1974).  
E. N. Bogomolov, To thermodynamics of a multiple-stage gas air-cooled turbine, *Izv. Vuzov. Aviats. Tekh.* No. 2, 132–140 (1974).  
G. A. Egorov and A. I. Shchegoleva, Thermodynamic characteristics of moist wheat starch, *Izv. Vuzov. Pishch. Tekh.* No. 4, 16–18 (1974).  
B. V. Lebedev and I. B. Rabinovich, Polymerization thermodynamics of vinyl monometers, *Trudy Khim. Khim. Tekh.* 2, 68–82 (1972).  
L. N. Maurin and E. D. Potapov, On thermal fluctuations near the points of rigid change in the stability of thermodynamic equilibrium states, *Uchen. Zap. Perm. Un-ta* No. 316, 205–208 (1974).  
G. M. Panchenkov, O. I. Kuznetsov and T. A. Chasova, Thermodynamics of acetone concentration, *Vestn. Mosk. Un-ta, Ser. II, Khim.* 15(4), 439–441 (1971).  
A. D. Rusin and O. P. Yakovlev, Thermodynamic analysis of complex equilibria at a constant pressure, *Vestn. Mosk. Un-ta, Ser. II, Khim.* 15(4), 427–431 (1974).  
V. N. Slesarenko and A. S. Shtym, To estimation of thermodynamic quality of thermal sea-water distillation, *Izv. Vuzov. Energ.* No. 8, 134–136 (1974).  
S. S. Stel'makh. Thermodynamic peculiarities of a substance in a solid state, *Ukr. Fiz. Zh.* 19(8), 1283–1288 (1974).  
S. M. Stishov, Thermodynamics of simple substance melting, *Usp. Fiz. Nauk* 114(1), 3–40 (1974).  
I. P. Vyrodov, On development of irreversible thermodynamics and the theory of transport phenomena within the framework of the Lagrangian formalism, the stability motion theory and integral invariants of continuum mechanics, *Trudy Krasnodar. Politekhn. In-ta* 51, 5–46 (1973).  
V. E. Yurkevich and B. N. Rolov, Thermodynamic formalism of point phase transitions in ferromagnetic solid solutions, I, *Izv. AN Latv. SSR, Ser. Fiz. i Tekhn. Nauk* No. 4, 42–49 (1974).

### THERMO PHYSICAL (TRANSPORT) PROPERTIES OF SUBSTANCES

- A. A. Agroskin et al., Thermophysical properties of thermally treated petroleum coke, *Tsvetn. Metally* No. 4, 33–34 (1974).  
A. B. Batdalov, V. I. Tamarchenko and S. S. Shalyt, Occurrence of the hydrodynamic effect in tungsten thermal conductivity, *J. Exp. Theor. Phys.* 20(6), 382–386 (1974).

- V. N. Bazarov and V. F. Ivanov, An installation for study of equivalent thermal conductivity of electrical sheet steels, *Trudy Mosk. Aviats. In-ta* **241**, 53–54 (1972).
- A. M. Evseev and A. K. Ashurov, Calculation of the thermal conductivity and shearing viscosity by the molecular dynamics method, *Zh. Fiz. Khim.* **48**(8), 2129–2130 (1974).
- N. V. Fedorovich, Thermodynamic properties of some chemical pharmaceutical preparations, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 28–37 (1974).
- G. B. Froishteter and B. N. Tambieva, Thermophysical properties of plastic lubricants and their dispersed media, *Khim. Tekh. Topliv i Masel* No. 8, 60–63 (1974).
- I. A. Ioffe, Unsteady heat conduction in a half space with an infinite number of cylindrical heat sources, *Zh. Prikl. Mekh. Tekh. Fiz.* No. 4, 164–168 (1974).
- V. V. Kharitonov and S. B. Tomashev, Heat conductivity of polymeric composite materials, *Izv. AN BSSR. Ser. Fiz.-Energ. Nauk* No. 3, 105–111 (1974).
- G. G. Konyushenko *et al.*, Study of thermophysical properties of liquid chalcogenides of antimony and bismuth by the hot-wire method, *Sb. Trud. Agr. Fiz.* **33**, 55–59 (1972).
- N. A. Kozlov *et al.*, Low-temperature heat capacity of cellulose dried at different temperatures, *Trudy Khim. Khim. Tekh.* **2**, 153–155 (1972).
- I. G. Kozhevnikov and G. M. Kudryacheva, Thermophysical properties of some glass-plastics at 90–470K, *Plast. Massy* No. 9, 74–75 (1974).
- A. I. Lutkov, Yu. N. Zakharov and V. N. Mikhailov, Study of thermal conductivity of carbon fabric covered with pyrocarbon, *Khim. Tverd. Topl. Maser.* No. 4, 125–129 (1974).
- A. V. Martynov *et al.*, Study of thermophysical properties of petroleum asphaltite powders, *Neft. Neftekh.* No. 8, 38 (1974).
- R. A. Mustafaev, Experimental study of thermal conductivity of hydrocarbons in liquid and vapour phases, *Teplofiz. Vysok. Temper.* **12**(4), 883–887 (1974).
- Ya. M. Naziev, M. A. Aliev and V. S. Efendiev, Study of thermophysical properties of A-72 gasoline at different temperatures and pressures, *Khim. Tekh. Topl. Maser.* No. 8, 35–37 (1974).
- Ya. M. Naziev and A. A. Nurberdyev, Thermal conductivity of binary mixtures of *u*-heptane and hexane I at high pressures and temperatures, *Teplofiz. Vysok. Temper.* **12**(4), 749–752 (1974).
- I. Ya. Neusikhin and A. M. Chichkin, Account of heater capacity in determining thermophysical properties of the test material at the thermal regime onset, In *Study of Transport Phenomena in Complex Systems*, Minsk, 198–202 (1974).
- Ya. S. Podstrigach, B. S. Vorobets and Yu. A. Chernukha, Effect of a heat conducting insertion on cyclic temperature stresses in an elastic cylinder, *Fiz.-Khim. Mekh. Mater.* **10**(4), 75–79 (1974).
- P. V. Polyakov and E. M. Gill'debrandt, Study of thermal conductivity of melts in a KCl-MgCl<sub>2</sub> system, *Teplofiz. Vysok. Temper.* **12**(4), 892–893 (1974).
- Yu. R. Rastorguev, G. F. Bogatov and B. A. Grigoriev, Investigation of thermal conductivity of higher *n*-alkanes, *Khim. Tekh. Topl. Maser.* No. 9, 54–57 (1974).
- V. T. Ryabin and V. I. Tedorov, Study of the complex of thermophysical properties of solids by the monotonic heating method, *Teplofiz. Vysok. Temper.* **12**(4), 753–760 (1974).
- A. M. Sirota, V. L. Latunin and G. M. Belyaeva, Experimental study of maximum thermal conductivity of water in a critical region, *Teploenergetika* No. 10, 52–58 (1974).
- L. S. Slobodkin and G. N. Pshenichnaya, Effect of thermal treatment on thermophysical properties of compound coatings, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 180–186 (1974).
- N. V. Stefanovskaya, Thermophysical properties of pike roe, *Izv. Vusov. Pishch. Tekh.* No. 4, 158–159 (1974).
- I. B. Sutkaitite, V. I. Manaryavichus and M. M. Tamonis, Simplified methods for determining thermal conductivity and viscosity of high temperature combustion products of hydrocarbon fuel, *Trudy AN Lit. SSR. Ser. B. Khim., Tekh. Fiz. Geogr.* **6**, 135–142 (1973).

## HEAT CONDUCTION

- Sh. M. Bakhushhev, Thermal waves from a source placed between a layer and half space, *Prikl. Mekh.* **10**(8), 75–82 (1974).
- B. A. Baum, O. Bekmuradov and V. I. Gribachev, A transient heat transfer process in fillings, *Izv. AN TSSR. Ser. Fiz.-Tekh., Khim. i Geolog. Nauk* No. 6, 32–39 (1973).
- M. I. Belyaev and P. Ya. Kogan, Probability methods for comparative estimation of a temperature field of the working surface of thermal equipment, *Izv. Vusov. Pishch. Tekh.* No. 3, 112–114 (1974).
- A. A. Bokrinskaya *et al.*, Application of the heat balance equation for analysing electrothermal elements, *Izv. Vusov. Radioelecrt.* **17**(9), 55–58 (1974).
- N. V. Diligensky and E. M. Ivanov, Calculation of quasi-stationary temperature fields in deformable media, *Fiz. Khim. Obrab. Mater.* No. 4, 67–74 (1974).
- O. A. Drozdov, E. A. Kurmazenko and A. V. Revyakin, A contactless method for studying temperature fields, *Kholod. Tekh.* No. 9, 29–33 (1974).
- A. S. Kalashnikov, On nature of disturbance propagation in the problems on non-linear heat conduction with absorption, *Zh. Vychisl. Mat. Mat. Fiz.* **14**(4), 891–905 (1974).
- A. L. Karaev, V. N. Akimov and Uglov, Temperature fields in welding of semiconductor apparatuses, *Fiz. Khim. Obrabotki Mater.* No. 4, 22–27 (1974).
- V. A. Kronrod, Z. G. Shaikhutdinov and V. V. Shchennikov, Flow of a viscous heat-conducting gas mixture with equilibrium chemical reactions in a plane nozzle with strong local injection, *Izv. Vusov. Aviats. Tekh.* No. 2, 76–83 (1974).
- G. G. Matlin, K. A. Radygina and R. W. Pribora, Calculation of the temperature of a non-uniformly cooled wall with regard for longitudinal thermal conductivity, *Teploenergetika* No. 10, 43–46 (1974).
- Yu. S. Postol'nik and A. I. Burtsev, Approximate determination of temperatures and stresses of fuel cells at non-linear heat conduction, *Atomn. Energ.* **37**(3), 248–249 (1974).
- A. K. Serdyukova, S. M. Kotlyar and I. P. Vyrodov, On application of the coupled integral equation method for solving some heat conduction problems, *Trudy Krasnodar. Politekh. In-ta* **51**, 93–102 (1973).
- N. M. Tsierl'man and E. M. Broshtein, The variational solution of the problem on heat transfer with laminar liquid flow in a channel, In *Study of Transfer Phenomena in Complex Systems*, Minsk, 64–71 (1974).
- P. V. Tsoi and G. A. Kasparyan, Temperature fields and thermoelastic stresses when roasting ceramic wares (a plate and solid cylinder), In *Study of Transfer Phenomena in Complex Systems*, Minsk, 146–154 (1974).
- R. Sh. Vainberg, S. A. Tyutyuma and V. K. Shchitnikov, Properties of a binary gas mixture above different potassium electrolyte solution, In *Study of Transfer Phenomena in Complex Systems*, Minsk, 72–80 (1974).
- I. P. Vyrodov, Application of the markovian process (the Monto-Carlo method) for solving boundary-value problems on diffusion and heat conduction, *Trudy Krasnodar. Politekh. In-ta* **51**, 82–92 (1973).
- A. A. Zatovskaya, On the Brownian motion of a particle in a heat conducting liquid, *Ukr. Fiz. Zh.* **19**(9), 1449–1455 (1974).

## HYDRODYNAMICS

### 1. Boundary layer

- F. Aliev, Distribution of component concentrations and gas mixture temperature parallel in a plane free boundary layer at chemical equilibrium, *Vopr. Mekh. (In-t Mekh. Seismost. Sooruzh. AN UzSSR)* **11**, 87–90 (1972).
- V. V. Drobilenkov and G. I. Kanevsky, A laminar boundary layer and its stability in weak polymer solutions, *Izv. AN SSSR. Mekh. Zhid. Gasa* No. 4, 156–158 (1974).

- A. M. Kharitonov and V. V. Chernykh, On effect of the single  $Re$  number upon the transition in a supersonic boundary layer, *Izv. AN SSSR, Mekh. Zhid. Gaza* No. 4, 150–153 (1974).
- A. G. Kulikovski and F. A. Slobodkina, On the choice of self-similar solution in the boundary layer theory, *Izv. AN SSSR, Mekh. Zhid. Gaza* No. 4, 42–46 (1974).
- Yu. V. Rapin and Yu. S. Chumakov, A turbulent boundary layer in a multicomponent dissociating gas, *Izv. AN SSSR, Mekh. Zhid. Gaza* No. 4, 26–35 (1974).
- L. M. Lyamshev, M. G. Puzino and S. A. Salosina, Characteristics of pressure fluctuations at distributed turbulent boundary layer suction, *Akustich. Zh.* **20**(5), 733–737 (1974).
- A. N. Popkov, One type of universal equations for a laminar boundary layer in an equilibrium dissociating gas, *Izv. Vusov. Aviats. Tekh.* No. 2, 25–31 (1974).
- 2. Turbulent flows**
- E. N. Bondarev and I. D. Lisichko, Propagation of an under-expanded turbulent jet in a cocurrent supersonic flow, *Izv. AN SSSR, Mekh. Zhid. Gaza* No. 4, 36–41 (1974).
- N. S. Borovkov and T. N. Khalabaeva, Some methodical problems on calculation of statistical turbulence characteristics using computer, *Sb. Trudov. Mosk. Inzh.-Stroit. In-ta* No. 89, 51–59 (1972).
- Yu. B. Kolesnikov and A. B. Tsinober, Experimental study of two-dimensional turbulence behind a grid, *Izv. AN SSSR, Mekh. Zh. Gaza* No. 4, 146–150 (1974).
- V. V. Pustovalov et al., Relaxation oscillations of parametric turbulence, *J. Exp. Theor. Phys.* **20**(6), 356–359 (1974).
- A. L. Tseskis and A. B. Tsinober, Some processes involving anomalous energy transfer over a turbulence spectrum, *Magnitn. Gidr.* No. 3, 23–26 (1974).
- V. N. Zhigulev, Models of turbulent motions (on development of disturbances in turbulent flows), *Chisl. Met. Mekh. Splosh. Sredy* **4**(3), 76–89 (1973).
- V. N. Zhigulev, To the problem on disturbance propagation in turbulent flows, *Chisl. Metody Mekh. Splosh. Sredy* **4**(2), 51–61 (1973).
- 3. Kinetic theory of liquids and gases**
- G. O. Balabanyan and A. D. Khon'kim, On construction of generalized normal solutions for kinetic equations, *Chisl. Metody Mekh. Splosh. Sredy* **4**(3), 49–55 (1973).
- V. D. Borman, A. S. Bruev and L. A. Maksimov, On a quasiclassical kinetic equation for gases with rotary degrees of freedom, *Zh. Eksp. Teoret. Fiz.* **67**(3), 951–967 (1974).
- O. A. Korovkin and Yu. Khlopkov, Solution of the problem on the Knudsen layer at slow surface condensation (evaporation), *Izv. AN SSSR, Mekh. Zhid. Gaza* No. 4, 175–176 (1974).
- E. M. Shashkov, Solution of axisymmetric problems of the rarefied gas theory by the finite difference method, *Zh. Vychisl. Mat. Mat. Fiz.* **14**(1), 970–981 (1974).
- Yu. M. Zubarev and V. A. Smirnov, On one exact solution for the kinetic equations with a self-consistent field, *Izv. AN SSSR, Mekh. Zhid. Gaza* No. 4, 133–138 (1974).
- FORCED CONVECTION**
- V. P. Bobkov et al., Heat transfer in water flow in a triangular packed rod bundle, *Atomn. Energ.* **37**(2), 127–130 (1974).
- M. N. Borisuk, Asymptotic solution of a non-linear problem on transient heat transfer and filtration, *Asimpt. Met. Teor. Sist.* **2**, 102–108 (1972).
- A. P. Burmistenkov and V. A. Dubrovnyi, Study of heat transfer from working units of equipment to a sewing article during moist—thermal treatment, *Izv. Vusov. Tekh. Legk. Prom.* No. 1, 138–141 (1974).
- A. N. Devino and V. S. Migorodskiy, Some peculiarities of heat transfer at cooling of a turbulent flow of a chemical non-equilibrium  $\text{N}_2\text{O}_4 \rightleftharpoons \text{NO}_2 \rightleftharpoons 2\text{NO} + \text{O}_2$  system in a tube, *Izv. AN SSSR, Ser. Fiz-Energi. Nauk* No. 3, 60–65 (1974).
- V. A. Gaschenko et al., A stand for studying corrosion cracking of stainless steels in a water flow of high parameters with heat transfer, *Teploenergetika* No. 10, 49–51 (1974).
- L. G. Genin, S. P. Manchha and V. G. Soiridov, Effect of a longitudinal magnetic field and heat transfer in mercury flow in a circular duct, *Trudy Mosk. Energ. In-ta* **115**, 139–154 (1972).
- V. I. Gomelauri, Methods and experimental results for convective heat transfer intensification, *Teploenergetika* No. 9, 2–5 (1974).
- Yu. A. Koshelev and S. B. Svirshchevsky, Heat transfer of a plate in a hypersonic near-free molecular flow, *Izv. AN SSSR, Energ. Transp.* No. 4, 138–145 (1974).
- Yu. N. Kuznetsov, Transient convective heat transfer in tubes, *Teploenergetika* No. 9, 11–15 (1974).
- Z. B. Kheirov, Transient heat transfer in viscous liquid flow between two non-axial circular cylinders, *Uchen. Zap. Aserb. In-ta, Ser. Fiz.-Mat. Nauk* No. 2, 54–59 (1973).
- V. V. Levkovich, G. V. Benzar' and V. E. Andreev, Computational-experimental method for determining heat losses in water thermal mains, *Izv. Vusov. Energ.* No. 8, 91–95 (1974).
- I. D. Liseikin et al., Study of heat transfer and drag in membrane convective tube bundles with profile attachments shape links, *Teploenergetika* No. 9, 31–35 (1974).
- A. I. Lyubarsky, Yu. S. Skoropanov and V. P. Popov, Heat transfer in laminar gas flow in an annular channel of variable section, In *Study of Transfer Phenomena in Complex Systems*. Minsk, 52–63 (1974).
- E. D. Maltsev and V. S. Timofeev, Study of hydrodynamics and heat transfer in film boiling of sea water (in a distiller), *Sb. Trudov. Mosk. Inzh.-stroit. In-ta* **89**, 159–167 (1972).
- V. B. Nesterenko et al., Heat transfer in laminar flow of chemically reacting  $\text{NO}_2$  gas in a triangular rod bundle, *Izv. AN SSSR, Ser. Fiz.-Energ. Nauk* No. 3, 112–118 (1974).
- V. Yu. Petrovich, B. E. Tverkovkin and V. B. Nesterenko, To calculation of turbulent heat transfer in a tube using M. D. Millionshchikov's turbulent transfer models, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 102–104 (1974).
- E. M. Puzyrev and V. V. Salomatov, Laws of transient heat transfer at radiant heating of a laminar liquid flow in a long channel, *Teplofiz. Vysok. Temp.* **12**(4), 769–774 (1974).
- G. V. Sadovnikov, B. M. Smol'sky and V. K. Shchitnikov, Heat transfer of a plane plate in a near-wall jet at different initial turbulence levels, In *Study of Transfer Phenomena in Complex Systems*, Minsk, 81–91 (1974).
- G. I. Sergeev, On convective heat transfer intensification in swirled film flow, *Teor. Osnovy Khim. Tekhnolog.* **8**(5), 783–785 (1974).
- V. I. Subbotin, O. V. Remizov and V. A. Vorobiev, Calculation of a wall temperature profile in the deteriorated heat transfer region, *Teplofiz. Vysok. Temp.* **12**(4), 785–789 (1974).
- A. D. Terekhov and E. N. Frolova, Some problems of heat transfer in rarefied gases, *Trudy SZPI (Sev.-Zap. Zaoczn. Politekhn. Inst.)* No. 20, 29–32 (1972).
- P. A. Ushakov, Calculation of temperature fields of fuel cell bundles in axial turbulent coolant flows at vanishingly small Prandtl numbers, *Teplofiz. Vysok. Temp.* **12**(4), 775–784 (1974).
- NATURAL CONVECTION**
- V. Kh. Izakson, Branching in the problem on convection onset in a liquid layer with a free boundary, *Izv. Sev. Kavk. Nauchn. Tsentr. Vyssh. Shkoly, Ser. Estestv. Nauk* No. 4, 30–34 (1974).
- S. S. Kutateladze, A. G. Kirdyashkin and V. P. Ivakin, Turbulent natural convection near the vertical isothermal plate, *DAN SSSR* **217**(6), 1270–1273 (1974).
- J. S. Markman, Convection onset in a viscous incompressible liquid flow with a temperature gradient periodically varying in time, *Izv. Sev.-Kavk. Nauch. Tsentr. Vyssh. Shkoly, Ser. Estestv. Nauk* No. 4, 48–51 (1973).
- A. F. Pshenichnikov and G. F. Shaidurov, Convective oscillations in communicating vessels, *Izv. AN SSSR, Mekh. Zhid. Gaza* No. 4, 4–9 (1974).

### PHASE TRANSFORMATIONS

- I. S. Bronshtein, Evaporation of multicomponent mixtures in capacities, *Trudy Vsesoyuzn. Nauchn. Issled. In-ta po Sbory, Podgotov. Transp. Nefti Nefteprod.* **11**, 115–122 (1973).
- I. S. Bronshtein, Khaziev and L. I. Savelieva, Study of evaporation of petroleum and petroleum products through slits of pontoon block in capacitance, *Trudy Vses. Nauchn. Issl. In-ta po Sbory, Podgot. Transp. Nefti Nefteprod.* **11**, 100–109 (1973).
- V. M. Borishansky *et al.*, Experimental study of heat transfer at vapour condensation inside coils, *Energomashinostr.* No. 7, 36–37 (1974).
- S. G. Chuklin and S. Yu. Lar'yanovsky, Heat transfer in a sheet channel evaporating condenser, *Kholod. Tekhn.* No. 9, 21–24 (1974).
- V. T. Derov *et al.*, Correlation of experimental data on heat transfer at condensation on horizontal tubes with transverse finning, *Izv. AN BSSR. Ser. Fiz. Energ. Nauk* No. 3, 66–70 (1974).
- L. A. Faingol'd, To determination of a mass transfer surface at evaporation, In *Study of Transport Phenomena in Complex Systems*, Minsk, 92–98 (1974).
- G. A. Filippov *et al.*, Study of condensation processes in a turbine stage, *Teploenergetika* No. 9, 63–66 (1974).
- N. I. Gel'perin *et al.*, Study of heat transfer in boiling of binary mixtures of *n*-butyl alcohol with *n*-heptane and *n*-octane in a vertical evaporator with natural circulation, *Trudy In-ta (Mosk. In-t Tonkoi Khim.-Tekhnologii)* **2**(1), 109–114 (1972).
- V. A. Grigoriev *et al.*, Experimental study of vapour bubble dynamics at boiling of water and ethanol on different metal heating surfaces, *Izv. Vuzov Energetika* No. 8, 84–90 (1974).
- V. P. Isachenko, F. Salomzoda and A. A. Shalakov, Study of heat transfer at film steam condensation in a vertical tube, *Teploenergetika* No. 9, 15–18 (1974).
- M. I. Ismailov and A. Azizov, On a boundary layer velocity profile of an evaporating surface at small velocities of the incoming flow, *Vopr. Mekh. (In-t Mekh. Seismost. Sooruzh. AN UzSSR)* **11**, 101–107 (1972).
- M. I. Ismailov and A. A. Azizov, On a temperature profile of boundary layer temperature profile of an evaporating surface at small velocities of the incoming flow, *Vopr. Mekh. Seismostoi. Sooruzh. AN UzSSR* **11**, 97–100 (1972).
- E. K. Kalinin *et al.*, Film boiling of underheated liquid nitrogen at high temperature heads, *Izv. Vuzov. Aviats. Tekh.* No. 2, 89–93 (1974).
- L. N. Karavanskaya and I. P. Vydrov, A problem on metal ingot melting at carbon diffusion inside a solid phase, *Trudy Krasnodar. Politekh. In-ta* **51**, 47–60 (1973).
- A. Khamadov, Study of evaporative heat and mass transfer (in helioenergy plants) at natural convection, *Geliotekh.* No. 4, 55–58 (1974).
- A. M. Kulakovskii and V. G. Petrenko, Solution of boundary value Stefan-type problems for ingot solidification, *Fiz. Khim. Obrab. Mater.* No. 4, 61–66 (1974).
- P. S. Kuts, Kinetics of evaporation of single drops, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 3–15 (1974).
- D. P. Lebedev and E. F. Andreev, Heat critical loads of ejection and freezing at ice–water sublimation from a porous plate into vacuum, In *Study of Transport Phenomena in Complex Systems*, Minsk, 106–113 (1974).
- E. D. Mal'tsev, L. P. Ivanov and V. K. Rumyantsev, Steam condensation in a paraffin–steam ejector (in distillation), *Sb. Trud. Mosk. Inzh.-Stroit. In-ta* No. 89, 178–184 (1972).
- V. V. Nashchokin and A. V. Klevtsov, Hydraulic resistance and friction coefficient at condensation of a moving vapour in plane-parallel small-size channels, In *Study of Transport Phenomena in Complex Systems*, Minsk, 124–133 (1974).
- V. I. Pashek, Analytical determination of time of frozen ground defrosting, In *Study of Transport Phenomena in Complex Systems*, Minsk, 166–178 (1974).
- Yu. P. Samokhvalov, Analysis of criterial equations for external heat and mass transfer at vacuum sublimation, *In Study of Transport Phenomena in Complex Systems*, Minsk, 99–105 (1974).
- E. V. Stekol'shchikov and A. S. Fedorov, Experimental study of sound wave propagation parameters in boiling water, *Teploenergetika* No. 9, 76–77 (1974).
- V. I. Subbotin *et al.*, A heat transfer crisis in tubular fuel cells of nuclear power reactors, *Teploenergetika* No. 9, 24–29 (1974).
- I. P. Vydrov, On application of the characteristic method for solving the problems with moving boundaries of phase conversions and the Stefan problem, *Trudy Krasnodar. Politekh. In-ta* **51**, 103–120 (1973).
- I. P. Vydrov, N. G. Ermakova and L. K. Matyugina, Application of the Biot principle to solution of moving boundary problems with the first boundary condition as an arbitrary time function, *Trudy Krasnodar. Politekh. In-ta* **51**, 61–81 (1973).
- I. P. Vydrov and G. V. Zavalko, On physical essence of boundary-value problems and moving boundary conditions and establishment of the generalized law for interphase mixing involving transport phenomena, *Trudy Krasnodar. Politekh. In-ta* **51**, 145–172 (1973).
- V. D. Yusufova, A. I. Bronshtein and G. P. Ugrelhelidze, Heat transfer crisis at boiling of salt waters in tubes, *Teploenergetika* No. 10, 82–84 (1974).

### RADIATION

- L. A. Dombrovsky, Radiant heat transfer equilibrium in a plane layer of an absorbing and scattering media, *Izv. AN SSSR. Mekh. Zhid. Gaza* No. 4, 183–186 (1974).
- V. L. Dragun, Quantitative analysis of pharmaceutical mixtures by infrared absorption spectra, In *Heat and Mass Transfer Processes at Drying of Different Materials*, Minsk, 203–209 (1974).
- L. N. Glushko, L. A. Kovalenko and V. I. Tverdokhlebov, Radiation of acetylene-air flame activated by a d.c. discharge, *Fiz. Goren. Vzryva* **10**(4), 614–615 (1974).
- A. P. Ivanov and V. L. Dragun, Study of unsteady radiant transfer in a plane layer of light-scattering and absorbing media, In *Heat and Mass Transfer Processes at Drying of Different Materials*, Minsk, 174–179 (1974).
- V. V. Ivanov and I. L. Dunin, Radiant heat transfer to the boundary layer of a cooling liquid, *Teplofiz. Vysok. Temp.* **12**(4), 898–900 (1974).
- L. Yu. Paderin, Study of characteristics of a thermal radiant throttle for controlling radiant flux density, *Teplofiz. Vysok. Temp.* **12**(4), 797–805 (1974).
- G. L. Polyak, Analogy between molecular and radiant energy transfer processes, *Teploenergetika* No. 9, 5–11 (1974).
- Yu. A. Popov, Application of a statistical band model to calculating radiant characteristics of non-uniform and non-isothermal gases, *Teplofiz. Vysok. Temp.* **12**(4), 790–796 (1974).
- Yu. A. Surinov and L. V. Ponomareva, Numerical study of radiant heat transfer in the square stretched chamber filled with an absorbing medium, *Izv. AN SSSR. Energ. Transp.* No. 4, 129–137 (1974).

### COMBINED HEAT AND MASS TRANSFER

- V. L. Batievsky, Calculation of relative values of radiant and convective components of a heat flux, In *Study of Transport Phenomena in Complex Systems*, Minsk, 194–197 (1974).
- I. L. Dunin and V. V. Ivanov, A conjugate heat transfer problem with regard for surface radiation, *Izv. AN SSSR. Mekh. Zhid. Gaza* No. 4, 187–190 (1974).
- M. Kh. Kishinevsky and T. S. Kornienko, To calculation of heat and mass transfer at the starting length in developed turbulent flow and at  $Pr \gg 1$ , *Teor. Osnovy Khim. Tekh.* **8**(5), 799 (1974).
- A. L. Lyubarsky *et al.*, Methods for calculating heat and mass transfer in vertical reactors with epitaxial build-up of silicon layers, In *Study of Transport Phenomena in Complex Systems*, Minsk, 39–51 (1974).

K. G. Omel'chenko, M. V. Savelov and V. P. Timoshenko, To study of heat and mass transfer processes in decomposing porous materials, *Teplofiz. Vysok. Temp.* **12**(4), 761–768 (1974).

V. I. Prasolov and E. M. Fedorov, Heat and mass transfer in gas-phase zirconium carbide sedimentation, *Atomn. Energ.* **37**(3), 247–248 (1974).

S. V. Ryzhkov, V. V. Ershov and A. K. Albantov, Study of heat and mass transfer in dispersed gas–liquid flow in a curvilinear separating channel, *Teploenergetika* No. 9, 79–82 (1974).

G. T. Sergeev, Internal heat and mass transfer at injectant filtration through a porous wall and in the presence of chemical reactions, In *Study of Transport Phenomena in Complex Systems*, Minsk, 3–25 (1974).

A. M. Zavatko and M. F. Shnaiderman, Study of heat and mass transfer in a reacting boundary layer of a plate at leading length, In *Study of Transport Phenomena in Complex Systems*, Minsk, 26–38 (1974).

#### RHEOPHYSICS

V. I. Baikov, On shaking off a visco-plastic liquid film from a plane surface, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 123–127 (1974).

G. M. Bartenev and I. A. Kuznetsova, Pressure effect on relaxation properties of elastomers, *Mekh. Polimer.* No. 3, 453–461 (1974).

V. I. Bekichev, On a forced-elastic deformation mechanism, *Vysok. Soedinen.*, Ser. A, **16**(8), 1745–1747 (1974).

M. M. Bernshtein, F. D. Zhitetskaya and B. Yu. Krasnov, Rheological properties of polyvinylbutyral solutions, *Izv. Vuzov Khim. Khim. Tekh.* **17**(7), 1107–1109 (1974).

E. S. Rozantsev, I. G. Medvedev and V. L. Bul'benko, Study of rheological properties of coal and rocks on wetted areas of brake-impending seams, *Trudy In-ta (Nauch.-Issl. In-t Stroit. Ugol'nykh Gorn. Pred. "KuzNIIShakhstroi")* **10**, 23–29 (1972).

F. A. Garifullin and K. Z. Galimov, On hydrodynamic stability of non-Newtonian liquids, *Prikl. Mekh.* **10**(8), 3–25 (1974).

N. I. Ivanova, B. I. Morgunov and I. E. Troyanovsky, Calculation of non-linear vibrations of a visco-elastic rod, *Mekh. Polimer.* No. 3, 561–564 (1974).

U. A. Mamedov, Similarity criteria of hydromechanic and thermal phenomena in visco-elastic liquids, *Teor. Osnovy Khim. Tekh.* **8**(5), 706–711 (1974).

V. I. Matyash, Parametric oscillations of a visco-elastic cylindrical shell, *Mekh. Polimer.* No. 3, 479–483 (1974).

B. S. Mosakov, Determination of visco-plastic properties of freshly prepared concrete mixtures, *Izv. Vuzov, Stroiti. i Arkhit.* No. 7, 138–142 (1974).

P. P. Mosolov and V. P. Myasnikov, A boundary layer in the problem on the longitudinal motion of a cylinder in a viscoplastic medium, *Prikl. Mat. Mekh.* **38**(4), 682–692 (1974).

Kh. Movlyankulov, Study of non-linear vibrations of visco-elastic systems by the averaging method, *Mekh. Polim.* No. 3, 496–500 (1974).

M. P. Platonov, N. M. Domareva and N. V. Nekrasov, Study of hydrodynamic properties of high density polyethylene macromolecules, *Vysokomolek. Soedinen. Ser. B*, **16**(8), 630–631 (1974).

Z. P. Shulman and V. M. Nosov, Influence of dispersed phase moisture on spontaneous rotation of a dielectric and the electrorheological effect, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 119–122 (1974).

A. N. Sundukov et al., Rheological properties of petroleum slime, *Neft. Neftekhim.* No. 9, 11–12 (1974).

G. G. Starobinets and I. T. El'perin, On possible effect of surface active agents on a turbulent viscous flow, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 81–87 (1974).

I. E. Troyanovsky, On one solution method of non-linear integral viscoelasticity equations, *Mekh. Polim.* No. 3, 529 (1974).

I. E. Troyanovsky, On construction of periodical solutions of integral differential viscoelasticity, *Mekh. Polim.* No. 3, 529–531 (1974).

#### HEAT AND MASS TRANSFER IN TECHNOLOGICAL PROCESSES

##### 1. Drying

V. E. Babailev and V. N. Petri, On drying of veneer in a fluidized bed of the inert fine-grained material, *Izv. Vuzov, Lesnoi Zh.* No. 1, 85–88 (1974).

V. E. Babailev and V. N. Petri, On drying of veneer in a fluidized bed of inert granular heat agent, *Trudy Ural. Lesotekhn. In-ta* **26**, 99–102 (1972).

R. V. Burko, Automation of wood drying control with account for drying material state, *Trudy Ural. Lesotekhn. In-ta* **26**, 84–91 (1972).

O. N. Chebotarev and N. A. Il'yitsky, Kinetics and dynamics of crack formation in rice grains at convective drying, *Izv. Vuzov, Pishch. Tekh.* No. 4, 137–138 (1974).

L. L. Dobroserdov et al., Some experimental results of test dryer operation using high velocities of heat agent, *Izv. Vuzov, Tekh. Tekstil. Prom.* No. 2, 119–123 (1974).

A. M. Golubev, Yu. M. Ignatov and A. I. Petri, Study of possibility of tobacco leaf drying acceleration, *Sh. Nauch. Issl. In-ta Tabaka Makh.* **160**–**161**, 195–197 (1973).

E. I. Guigo, B. P. Kamovnikov and E. I. Kaushcheshvili, The basic trends in development of sublimation foodstuffs conservation technology, *Kholod. Tekh.* No. 9, 6–9 (1974).

F. V. Guriev, Water removal mechanism in drying of ceramic articles, *Trudy Ural. Politekh. In-ta* **199**, 83–88 (1971).

G. S. Kabaldin and V. A. Zavadsky, Heat and mass transfer at spray drying in swirled flows, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 99–105 (1974).

S. A. Karnaukhov et al., Drying of material in a decreasing drying rate period, *Trudy In-ta (Kasansk. Khim.-Tekh. In.)* **48**, 176–180 (1972).

P. M. Kornienko and N. T. Shelevskaya, Study of oxidizing kinetics of freshly greased plates of a lead accumulator in drying, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 151–161 (1974).

V. E. Kozin et al., Study of pellet drying, *Izv. AN SSSR, Metal.* No. 3, 233–235 (1974).

T. V. Kuchko, On adhering of material at spray drying, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 116–122 (1974).

P. S. Kuts, A method for determining moisture diffusivity in terms of the temperature drying coefficient, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 16–19 (1974).

Ya. Lazhe and I. Gerchikov, Drying of powdered sugar in a vibro-fluidized bed, *Trudy Latv. S-kh Akad.* **47**, 90–93 (1972).

M. M. Lukin and R. A. Kheraskov, An installation for slag drying in a fluidized bed, *Tsement.* No. 3, 15–16 (1974).

A. L. Lyuboshits et al., On grain sorption of carcinogenic compounds at drying, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 50–56 (1974).

M. G. Mingazov, Solution of the problem on optimization in construction of oscillating drying conditions (wood), *Izv. Vuzov, Lesnoi Zh.* No. 6, 105–107 (1973).

V. N. Petri and V. I. Chernov, Some problems of intensified air drying of wood at low temperatures, *Trudy Ural. Lesotekhn. In-ta* **26**, 75–81 (1972).

S. M. Reprintseva, N. V. Fedorovich and N. M. Syroid, On a falling rate of a granulated material at drying of medicine preparations in a falling bed, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 43–49 (1974).

A. D. Ryabinina, Study of different methods for drying coarse-leaf tobaccos of the Moldavskaya SSR, *Sb. Nauch. Issl. Rabot Vses. Nauch. Issl. In-ta Tabaka Makh.* **160**–**161**, 198–202 (1973).

V. G. Sidorov, M. V. Soldatenko and S. S. Vasiliev, Contri-

- bution of preliminary turbulization of a gas flow to drying of moist skins, *Izv. Vuzov, Tekhn. Legk. Prom.* No. 1, 62–65 (1974).
- G. L. Sirotnik and V. A. Tikhonovich, Measurement of moisture and dynamic characteristics of a suspended bed at variable drying, In *Study of Transport Phenomena in Complex Systems*, Minsk, 203–212 (1974).
- L. S. Slobodkin, S. A. Malyukovich and L. A. Kovalevskaya, Choice of optimum parameters of convective drying of a pepper plaster, *Khimiko-Farmats. Zh.* **8**(9), 47–51 (1974).
- L. S. Slobodkin, S. A. Malyukovich and V. V. Sokol'chik, Study of kinetics of solvent removal from compound polymer composition, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 162–168 (1974).
- E. G. Tutova and T. V. Kuchko, On intensification of spraying drying, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 106–115 (1974).
- M. R. Vashakidze, Optimum drying conditions of bilberries in their native state, *Konservn. Ovoshch. Prom.* No. 4, 30–31 (1974).
- S. S. Zabrodsky et al., Drying of biomycin in a vacuum-pulsating layer, *Khim.-Farmats. Zh.* **8**(9), 55–57 (1974).
- V. I. Zhidko and V. I. Atanazovich, Comparative intensity of moisture release of seeds of different agricultural crops in drying, *Izv. Vuzov, Pishch. Tekh.* **4**, 135–136 (1974).
- 2. Heat-transfer apparatus**
- I. A. Barsky, Transient characteristics of a gas-to-air heat exchanger, *Izv. AN SSSR, Energ. Transp.* No. 4, 168–172 (1974).
- E. N. Bukharkin, On application of contact heat exchangers for diagrams of gas-turbine plants for fresh water production, *Teploenergetika* No. 10, 59–62 (1974).
- M. A. Fialkov, New advances in engineering design of dynamic characteristics of heat exchangers, *Nauch. Trudy Omsk. Sel'sko-Khoz. In-ta* **94**, 222–226 (1972).
- V. M. Kopeliovich et al., Cellular heat exchangers of powerful rotary furnaces, *Tsement* No. 5, 18–19 (1974).
- Yu. F. Korotkov and N. A. Nikolaev, Study of mass transfer in apparatus with tangential vortex generators, *Trudy In-ta (Kazansk. Khim.-Tekh. In-t)* **48**, 35–38 (1972).
- Yu. F. Korotkov and N. A. Nikolaev, The efficiency of rotational contact stages of mass transfer apparatus with tangential vortex generators, *Trudy In-ta (Kazansk. Khim.-Tekh. In-t)* **48**, 24–27 (1972).
- G. I. Razvalov and B. M. Azizov, Study of operation of mass transfer apparatus with high separating power, *Trudy In-ta (Kazansk. Khim.-Tekh. In-t)* **48**, 91–96 (1972).
- E. S. Vyazovkin and N. A. Nikolaev, Calculation of a height of contact stages of rotational mass transfer apparatus, *Trudy In-ta Kazansk. Khim.-Tekh. In-t* **48**, 59–65 (1972).
- 3. Dispersed systems**
- V. S. Aliev et al., Study of thermocontact oxidizing pyrolysis of oil distillates in a fluidized bed of a heat-transfer agent, *Aserb. Khim. Zh.* No. 4, 3–6 (1973).
- A. D. Arkachenkov and M. S. Verteshev, Study of continuous separation of ionite mixtures in a horizontal fluidized bed, *Izv. Vuzov, Khim. Khim. Tekh.* **17**(7), 1090–1093 (1974).
- Yu. A. Buevich and Yu. A. Korneev, On reasons of steel cementing acceleration in a fluidized bed, *Zh. Prikl. Mekh. Tekh. Fiz.* No. 4, 79–87 (1974).
- A. V. Chechetkin et al., On the effect of the particle size in a solid phase on the intensity of their mixing at poly-dispersed materials fluidization, *Teor. Osnovy Khim. Tekh.* **8**(5), 796–798 (1974).
- V. S. Efremtsev and V. M. Kopeliovich, On choice of parameters determining dust entrainment in a rotary furnace, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 88–91 (1974).
- I. T. Elperin, V. L. Meltser and T. D. Israfilov, Peculiarities of alumite dust catching in counter-current dust catchers, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 210–214 (1974).
- I. T. Elperin, L. K. Zhitkevich and V. L. Meltser, Elements of gas-dynamics of a two-phase flow, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 141–150 (1974).
- L. Ya. Fadeeva, Experimental study of fundamental laws of hydrodynamics of a case in fluidized bed, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 123–132 (1974).
- N. F. Filippovsky and A. P. Baskakov, Behaviour of a fluidized bed near a submerged plate and heat-transfer mechanism between them, *Teor. Osnovy Khim. Tekh.* **8**(5), 786–789 (1974).
- N. I. Gelperin et al., Study of bromine absorption processes in apparatuses with a spherical fluidized packing, *Trudy In-ta (Mosk. In-t Tonkoi Khim. Tekh.)* **2**(1), 92–97 (1972).
- N. I. Gelperin, L. M. Polotskii and V. M. Myasoedkov, Mass transfer ability of an injector extraction column operating in a cyclic regime, *Trudy In-ta (Mosk. In-t Tonkoi Khim. Tekh.)* **2**(1), 213–217 (1972).
- G. I. Ivanov and V. N. Doronin, Study of longitudinal mixing of a solid phase in a pulsation extractor with cross-sectional trays, *Trudy In-ta (Kazansk. Khim.-Tekh. In-t)* **48**, 97–102 (1972).
- V. V. Kafarov et al., Study of a liquid flow structure on the commercial sieve plates, *Teor. Osnovy Khim. Tekh.* **8**(5), 732–738 (1974).
- E. I. Khodorov and M. S. Verteshev, On advantages of multisectional quasistationary regime stepped counterflow fluidized apparatuses, *Teor. Osnovy Khim. Tekh.* **8**(5), 671–676 (1974).
- V. A. Khokhlov et al., Application of a two-phase model for mathematical modelling of quasizero processes in a fluidized bed, *Khim.-Prom.* No. 8, 616–619 (1974).
- V. N. Kisel'nikov et al., Study of concentration distribution of a solid phase in a horizontal two-phase flow, (Mass-Transfer Apparatuses), *Trudy Ivan. Khim.-Tekhnol. In-ta* **13**, 134–138 (1972).
- L. M. Klyueva and N. I. Gelperin, On mixing of solid particles at fluidization in a conical apparatus, *Khim.-Farmats. Zh.* **8**(8), 37–40 (1974).
- M. A. Kosorotov, Heat transfer to a water-air flow with low air content, *Teploenergetika* No. 9, 29–31 (1974).
- Yu. V. Krasovitsky and K. A. Krasovitskaya, Separation of aerosols on cylindrical filtration barriers, *Khim. Prom.* No. 9, 694–696 (1974).
- V. A. Krivtson, An equation for water saturated sand compression and boundaries of its applicability, *Zh. Prikl. Mekh. Tekh. Fiz.* No. 4, 168–171 (1974).
- M. K. Likht and V. A. Shteinberg, On stability of a liquid layer in bubbling, *Izv. AN SSSR, Mekh. Zh. Gaza* No. 4, 47–53 (1974).
- V. S. Moryakov, N. A. Nikolaev and A. M. Nikolaev, Mathematical description of mass transfer in a liquid phase in vortex-type apparatus, *Trudy In-ta (Kazansk. Khim.-Tekh. In-t)* **48**, 72–76 (1972).
- V. P. Orlov et al., Enlargement mechanism and granular cinder characteristic at pyrite concentrate roasting in a fluidized bed, *Teor. Osnovy Khim. Tekh.* **8**(5), 792–786 (1974).
- I. O. Protod'yakova, O. V. Muratov and V. I. Sarshe, A stochastic model of operation of a sieve plate in a loose fluidized bed, *Prikl. Khim.* **47**(7), 1678 (1974).
- M. M. Razin and L. G. Golubev, Calculation of a gas flow in a periphery zone of a spouting bed at additional lateral injection, *Trudy In-ta (Kazansk. Khim.-Tekhnol. In-t)* **48**, 156–163 (1972).
- M. M. Razin and L. G. Golubev, Calculation of a gas flow in a periphery zone of a spouting bed at additional lateral injection, *Trudy In-ta (Kazansk. Khim.-Tekhnol. In-t)* **48**, 164–168 (1972).
- A. F. Revuzhenko and E. I. Shamyakin, Kinematics deformation of loose material with non-viscous friction, *Prikl. Mekh. Tekh. Fiz.* No. 4, 119–124 (1974).
- S. M. Reprintseva, Some theoretical preconditions of radiant energy transfer in dispersed systems, In *Heat and Mass*

- Transfer Processes in Drying of Different Materials*, Minsk, 187–193 (1974).
- G. S. Rozarenov, Effect of heat conduction and gas viscosity on pulsation of a spherical bubble in an incompressible fluid, *Trudy Nauch.-Issled. In-ta Mat. V.G.U. (Voronezhsk. In-t)* **8**, 10–15 (1973).
- A. I. Safonov, K. V. Gomonova and V. S. Krylov, Heat transfer to a growing bubble with gas dispersion into liquid, *Teor. Osnovy Khim. Tekh.* **8**(5), 698–705 (1974).
- N. I. Saveliev and N. A. Nikolaev, A flow around a liquid drop by a high-speed gas flow, *Trudy In-ta (Kazansk. Khim.-Tekhnol. In-t)* **48**, 77–82 (1972).
- N. A. Shakhova and I. G. Grishaev, Calculation of fluidized granulator for carboammophoska, *Khim. Neft. Mashinostr.* No. 9, 10 (1974).
- V. A. Sheiman and G. L. Sirotnik, Analytical solution of the problem on simultaneous heat and mass transfer in a fluidized bed under oscillating operating conditions, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 65–78 (1974).
- V. A. Sheiman and V. A. Tikhonovich, Measurement of local moisture contents in a dispersed bed, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 20–27 (1974).
- I. I. Shishko, A. V. Govorkov and A. P. Baskakov, Study of a gas distribution in multisectional horizontal fluidized apparatuses, *Khim. Neft. Mashinostr.* No. 9, 14–15 (1974).
- E. Z. Shul's and V. V. Dil'man, Estimation of circulation velocity and turbulent liquid viscosity in a bubbling bed, *Teor. Osnovy Khim. Tekh.* **8**(5), 790–792 (1974).
- L. A. Svergunenko et al., Determination of gas content in gas-liquid-type dispersed systems, *Teor. Osnovy Khim. Tekh.* **8**(5), 739–743 (1974).
- A. I. Tamarin and G. I. Kovensky, Study of the effect of gas distributing grid vibrations on homogeneity in a fluidized bed, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 74–77 (1974).
- A. V. Timofeev and M. E. Aerov, Hydrodynamics and mass transfer on a regular packet packing in a liquid-gas system, *Teor. Osnovy Khim. Tekh.* **8**(5), 651–656 (1974).
- V. S. Timofeev, T. S. Rudakovskaya and L. A. Serafimov, Peculiarities of irrigation of rectifying columns at heterogeneous mixture rectification, *Izv. Vuzov, Khim. i Khim. Tekh.* **17**(7), 1085–1089 (1974).
- A. A. Titov and Yu. D. Zel'vensky, Estimation methods for an active surface of a phase contact in a rectifying packed column, *Khim. Prom.* No. 9, 690–693 (1974).
- O. M. Todes, S. I. Radin and S. P. Nalimov, An analysis of temperature processes in granules at dehydration in a fluidized bed, *Zh. Prikl. Khim.* **47**(7), 1542–1545 (1974).
- E. G. Tutova and G. S. Kabaldin, Study of density and relative moisture of swirled gas-liquid flows, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 133–140 (1974).
- S. S. Zabrodsky, I. T. El'perin and Yu. R. Moskevich, Heat transfer in constrict and semifluidized bed, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 52–59 (1974).
- A. S. Zelepuga, G. L. Sirotnik and T. A. Malkova, Experimental determination of mass transfer characteristics of granular vegetable food-stuffs, In *Heat and Mass Transfer in Drying of Different Materials*, Minsk, 84–98 (1974).
- #### 4. Thermal treatment
- A. A. Bugaenok, V. F. Kopylov and S. L. Fofanov, Thermal treatment of stratified materials in an electromagnetic power current field, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 215–225 (1974).
- G. I. Konoshenko et al., Effect of thermal treatment of swelling rocks in a fluidized furnace on open sand properties, *Sb. Trud. Vses. Nauch.-Issl. In-ta Stroit. Mat. Konstr.* **27**, 88–98 (1973).
- V. N. Mironov et al., Determination of effective activation energy of thermal wood decomposition, In *Study of Transport Phenomena in Complex Systems*, Minsk, 134–140 (1974).
- #### LOW TEMPERATURES
- E. A. Kudryavtsev and E. N. Smirnov, To determination of friction heat evolution in piston packing of pumps for cryogenic liquids, *Khim. Neft. Mashinostr.* No. 9, 7–9 (1974).
- S. A. Ulybin, E. P. Zherdev and V. G. Motenko, Experimental study of a complex of thermophysical properties of solid materials at cryogenic temperatures, *Trudy Mosk. Energ. In-ta* **115**, 70–77 (1972).
- #### VACUUM TECHNIQUE
- I. F. Pikus and I. A. Gubsky, Study of vapour permeability of cable paper in vacuum, In *Heat and Mass Transfer Processes in Drying of Different Materials*, Minsk, 60–64 (1974).
- D. I. Proskurovsky, V. F. Puchkarev and S. M. Chesnokov, Some experimental data on electrical breakdown in ultra-high vacuum, *Izv. Vuzov, Fiz.* No. 7, 136–138 (1974).
- A. A. Khoromenko, On metal particle pulverization at vaporization in vacuum, *Fiz. Khim. Obrab. Mat.* No. 4, 48–51 (1974).
- #### AEROTHERMOOPTICS
- A. S. Syssoev, O. A. Tret'yakov and V. P. Shestopalov, A quasioptical theory for diffraction radiation of electron finite size, *Izv. Vuzov, Radiofiz.* **17**(7), 1075–1083 (1974).
- A. F. Yakubov, Stability of light beam propagation in a thermohydrodynamic light guide, *Izv. AN BSSR, Ser. Fiz.-Energ. Nauk* No. 3, 92–95 (1974).