

HEAT AND MASS TRANSFER BIBLIOGRAPHY— SOVIET WORKS

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(Received 8 September 1981)

BOOKS

- V. A. Borodulya *et al.* (Editors), *Boiling and Flow Heat and Mass Transfer of Cryogenic Liquids*. Izd. ITMO AN BSSR, Minsk (1980).
- P. L. Kirillov *et al.* (Editors), *Thermophysical Investigations—77: Collected Papers*, pt. I, *Heat Transfer and Hydrodynamics in the Elements of Atomic Power-Plants With Single-Phase Flow of a Heat Transfer Agent*. Izd. FEI, Obninsk (1980).
- S. S. Kutateladze (Editor), *Physical Hydrodynamics and Thermal Processes, Collected Papers*. Izd. Inst. Teplofiz., Novosibirsk (1980).
- S. S. Kutateladze (Editor), *Researches in Hydrodynamics and Heat Transfer, Collected Papers*. Izd. Inst. Teplofiz., Novosibirsk (1980).
- S. S. Kutateladze and B. P. Mironov (Editors), *Turbulent Transfer With Surface Injection, Collected Papers*. Izd. Inst. Teplofiz., Novosibirsk (1980).
- O. V. Maminov *et al.* (Editors), *Mass-Transfer Processes and Apparatus of Chemical Engineering Technology, Collected Papers*. Izd. KKhTI, Kazan (1980).
- L. S. Polak (Editor), *Synthesis in Low-Temperature Plasma, Collected Papers*. Izd. Nauka, Moscow (1980).
- A. I. Rusanov and F. Ch. Gudrich (Editors), *The Current Theory of Capillarity: Towards the Centenary of Gibbs' Capillarity Theory, Collected Papers*. Izd. Khimiya, Leningrad (1980).
- O. A. Terentiev, *Hydrodynamics of Fibrous Suspensions in Cellulose Paper Production*, Izd. Lesn. Prom., Moscow (1980).

PAPERS

THERMODYNAMICS

- I. P. Bazarov and P. N. Nikolaev, Statistical thermodynamics in the Bogolubov method, *Zh. Fiz. Khim.* **55**(6), 1405–1409 (1981).
- G. I. Berezin, Thermodynamic properties of liquid argon at saturation, *Zh. Fiz. Khim.* **55**(6), 1433–1441 (1981).
- S. A. Degtyarev and G. F. Voronin, Calculation of thermodynamic properties of alloys from the calorimetric data and diagrams of phase states. II. Alloys of indium with antimony, *Zh. Fiz. Khim.* **55**(5), 1136–1140 (1981).
- V. E. Gorbunov, K. S. Gavrichev and S. I. Bakum, Thermodynamic properties of LiAlH_4 in the temperature range from 12 to 320 K, *Zh. Neorgan. Khim.* **26**(2), 311–313 (1981).
- V. E. Gorbunov, K. S. Gavrichev, G. A. Sherpataya *et al.*, Thermodynamic properties of La_2CuO_4 within the temperature range of 12 to 340 K, *Zh. Neorgan. Khim.* **26**(2), 547–549 (1981).
- N. D. Gudkov, Towards thermodynamics of radiant energy conversion into work, *Zh. Tekh. Fiz.* **51**(6), 1306–1308 (1981).
- L. F. Kozin, R. Sh. Nigmatova, A. K. Kulikovskiy and A. M. Dairova, Thermodynamic properties of liquid alloys of the ternary mercury–cadmium–gallium system, *Izv. AN Kaz. SSR, Ser. Khim.* No. 5, 12–17 (1980).
- S. G. Popov and V. A. Levitsky, Thermodynamics of double oxide systems. The Debye temperatures, energy of zero vibrations and stabilization energy of oxides with spinel and ilmenite structures, *Zh. Fiz. Khim.* **55**(5), 1155–1159 (1981).
- V. N. Shilov, N. I. Zharkikh and Yu. B. Borkovskaya, The theory of non-equilibrium electro-surface phenomena in concentrated dispersed systems. I. Application of the method of irreversible thermodynamics to the cellular model of concentrated dispersion, *Kolloid. Zh.* **43**(3), 540–545 (1981).
- V. A. Sidorov, M. V. Sycheva and A. A. Kharchenko, Thermodynamic calculation of the process of I,I(bis-2,4 dimethylphenyl) ethane cracking, *Khim. Promysh.* No. 5, 284–286 (1981).
- M. M. Spivak, R. A. Isakova, L. S. Chelokhsaev *et al.*, Thermodynamic analysis of the mercury–sulphur–oxygen system, *Izv. AN Kaz. SSR, Ser. Khim.* No. 5, 6–11 (1980).
- R. L. Stratonovich and A. V. Tolstopyatenko, Admittance functions and three-time moments in non-linear non-equilibrium thermodynamics, *Vestnik Moskov. Univ., Ser. 3, Fiz., Astronom.* **22**(3), 15–20 (1981).

THERMOPHYSICAL (TRANSPORT) PROPERTIES

- A. A. Aleksandrov and A. B. Matveev, Dynamic viscosity and thermal conductivity of water in the critical region, *Teplofiz. Vysok. Temp.* **19**(2), 287–292 (1981).
- B. A. Arutyunov, Construction of generalized methods for the prediction of thermophysical properties of amorphous polymers, *Teor. Osnovy Khim. Teknol.* **15**(2), 266–278 (1981).
- P. V. Avlasenko, N. F. Gladky and B. D. Timofeev, Thermal conductivity of nitrogen tetroxide, *Vestsi Akad. Navuk BSSR, Ser. Fiz.-Energ. Navuk* No. 2, 105–107 (1981).
- V. N. Belomestnykh, M. N. Grineva and S. R. Sharov, Heat capacity of sodium azide in the region of polymorphous transformation, *Zh. Fiz. Khim.* **55**(2), 503–505 (1981).
- S. V. Boyarsky and I. I. Novikov, Heat capacity and certain acoustic characteristics of Co and Zr in the region of phase transitions, *Teplofiz. Vysok. Temp.* **19**(1), 201–203 (1981).
- V. V. Burinsky, E. E. Totsky and S. P. Nikodimov, Experimental results on thermal conductivity of six-sulphur fluoride in the critical region, *Teplofiz. Vysok. Temp.* **19**(3), 514–518 (1981).
- A. Zh. Grebenkov, A. N. Dashuk and A. B. Verzhinskaya, Isobaric heat capacity of dissociating nitrogen tetroxide. I. Analysis of the experimental method and results of investigation in a gas phase, *Vestsi Akad. Navuk BSSR, Ser. Fiz.-Energ. Navuk* No. 2, 79–85 (1981).
- M. A. Gromov, E. I. Koroleva and V. G. Budina, Thermophysical properties of the paste "Okean", *Izv. VUZov, Pishch. Tekhnol.* No. 3, 90–92 (1981).
- M. A. Gromov and V. V. Pereverzev, The procedure for studying thermophysical properties of cereal kernels pp. 131–136, in *Improvement of Technology and Quality of Food Stuffs and Products of Public Catering*, Vladivostok (1979).
- A. G. Gurevich and I. V. Balter, The technique for determining thermophysical characteristics of sheet and film materials, *Vopr. Stroito.* No. 8, 14–18 (1980).
- L. E. Gurevich and E. T. Krylov, Influence of the capture effects on thermal conductivity of noncompensated metals, *Fiz. Tverd. Tela* **23**(1), 10–22 (1981).

- B. S. Kolupaev and N. A. Bordyuk, Study of thermal conductivity of an interface layer in filled polyvinylbutyral, *Vysokomolekul. Soedin. Ser. A* **23**(7), 1499–1504 (1981).
- Ya. A. Kraftmakher, The method for observation of relaxation effects in high-temperature heat capacity of metals, *Teplofiz. Vysok. Temp.* **19**(3), 656–658 (1981).
- R. V. Lutsyk and E. S. Malkin, Study of moisture conduction properties of textile materials, *Prom. Teplotekh.* **3**(4), 68–75 (1981).
- S. G. Magerramov, Investigation of temperature and pressure-dependent thermal conductivity of isobutylformate, *Izv. VUZov, Neft Gaz* No. 1, 91–92 (1981).
- K. K. Mamedov, I. G. Kerimov, M. I. Mekhtiev et al., Heat capacity of seleniums in the region of vitrification and crystallization, *Izv. Akad. Nauk Azerb. SSR, Ser. Fiz.-Tekh. Matem. Nauk* **1**(3), 81–84 (1980).
- V. G. Merezhin and V. S. Mukhovatov, Electronic heat conduction and diffusion in a TOKAMAK, *Pis'ma v Zh. Eksp. Teor. Fiz.* **33**(9), 463–467 (1981).
- V. I. Minchenko, M. V. Smirnov and V. P. Stepanov, Compressibility and heat capacity of melted CsF–CsCl, CsF–CsBr, CsF–CsI mixtures, *Zh. Fiz. Khim.* **55**(5), 1151–1154 (1981).
- D. A. Narinsky, Effective thermal conductivity of granular filling, *Teplofiz. Vysok. Temp.* **19**(3), 577–580 (1981).
- V. I. Nepsha, N. F. Reshetnikov, Yu. A. Klyuev et al., Thermal conductivity of natural diamonds with different types of physical classification pp. 103–111, in *Improvement of Serviceability of Diamond Tool*, Moscow (1980).
- P. P. Oleimikov, Thermal conductivity of pure iron, *Teplofiz. Vysok. Temp.* **19**(3), 533–542 (1981).
- I. I. Petrova and V. Ya. Chekhovskoi, Employment of an electronic minicomputer in investigations of heat capacity of refractory compounds by pulse method, *Teplofiz. Vysok. Temp.* **19**(3), 603–607 (1981).
- V. P. Pogodin, V. M. Zelenkin and A. F. Vorobiev, Thermal conductivity of formamide solutions of alkaline metal iodides at the temperatures of 323, 348 and 373 K, *Trudy Mosk. Khim.-Tekhnol. Inst. Vyp.* **111**, 118–121 (1980).
- A. A. Vecher, A. G. Gusakov, A. A. Kozyro and P. A. Poleshchuk, Heat capacity and thermodynamic properties of antimony, *Zh. Fiz. Khim.* **55**(6), 1609–1610 (1981).
- G. I. Volokitin and L. M. Zubov, Heat conduction in labolinear thermoelastic isotropic materials, *Trudy Krasnodarsk. Politekh. Inst. Vyp.* **101**, 96–102 (1980).
- A. F. Vorobiev, V. A. Vasiliev and B. V. Mikhailin, Heat capacity and density of the $\text{MgBr}_2\text{--MeBr}_2\text{--H}_2\text{O}(\text{Me--Sr, Co})$ systems and corresponding binary solutions at 298.15 K, *Trudy Mosk. Khim.-Tekhnolog. Inst. Vyp.* **111**, 121–127 (1980).
- 136–141, in *Mathematical Methods for Studying Physical Fields*, Kiev (1980).
- T. G. Faradzhev, D. A. Kerimov and O. S. Zeinalov, Problems of cooling cylindrical heated bodies; temperature distribution, temperature stresses, *Izv. VUZov, Neft Gaz* No. 5, 71–75 (1981).
- N. M. Galin, A method for solving a particular class of non-linear heat transfer problems with varying boundary conditions, *Teploenergetika* No. 4, 55–56 (1981).
- A. S. Galitsyn, A spatial unsteady-state heat conduction problem for the exterior of two non-intersecting unequally sized spheres pp. 112–136, in *Mathematical Methods for Studying Physical Fields*, Kiev (1980).
- A. V. Gordeev, Towards the solution of a temperature problem of gear-grinding, *Trudy VNII Tsementn. Mashinost. Vyp.* **23**, 76–82 (1980).
- I. M. Grach, Integral solutions of the Laplace equation, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* **1**, 80–86 (1981).
- L. P. Kuptsov, Concerning the properties of an average for a heat conduction equation, *Matem. Zametki* **29**(2), 211–223 (1981).
- A. M. Makarov and V. R. Romanovsky, Solution of the unsteady-state heat conduction problem in non-ideally conjugated geometrically heterogeneous structures, *Prom. Teplotekh.* **3**(4), 16–22 (1981).
- A. S. Minenko, Concerning solvability of a particular thermophysical problem with a free boundary pp. 104–114, in *Boundary-Value Problems for Differential Equations*, Kiev (1980).
- R. I. Mokrik and Yu. A. Pyriev, The structure of wave temperature fields after thermal shock on a portion of the half-space boundary, *Prikl. Mekh.* **17**(2), 134–138 (1981).
- V. G. Prokopov, E. I. Beshpalova and Yu. V. Sherenkovsky, Fourier's technique of separation of variables and the methods of complete systems for the solution of multi-dimensional thermophysical problems, *Prom. Teplotekh.* **3**(3), 57–63 (1981).
- V. N. Pustovalov and Yu. Ya. Matveev, Calculation of temperature fields of irregularly shaped bodies of revolution, *Izv. VUZov, Energetika* No. 5, 57–62 (1981).
- V. O. Shtangeev, I. S. Gulyi and I. G. Bazhal, Effect of the vacuum-apparatus temperature field non-uniformity on recrystallization intensity, *Prom. Teplotekh.* **3**(4), 44–46 (1981).
- S. V. Sobol, Towards calculation of the temperature state of a river valley in permafrost ground, *Izv. VUZov, Energetika* No. 5, 116–117 (1981).
- A. K. Sokolov, Calculation of heat transfer in computer simulation of electric installations, *Izv. VUZov, Energetika* No. 5, 104–106 (1981).
- V. S. Soloviev, A. V. Attektov and M. M. Boiko, Concerning a particular case of the Lagrange problem solution, *Trudy MVTV* No. 340, 4–13 (1980).
- A. A. Sverdlov and A. I. Valeeva, A mathematical model and algorithm for the solution of the problem of nonstationary heat transfer during ethylene pipeline discharge, *Prom. Teplotekh.* **3**(4), 40–43 (1981).
- A. A. Uglov and A. P. Guskov, Small perturbation of a concentrated energy flux to a metal surface, *Fiz. Khim. Obr. Mat.* No. 2, 16–20 (1981).
- A. A. Uglov and G. V. Smolsky, Calculation of heating of thin plates on heat-removing pad by a normally distributed source with regard for the temperature dependence of thermophysical coefficients, *Fiz. Khim. Obr. Mat.* No. 2, 3–8 (1981).
- A. A. Uglov, I. Yu. Smurov and S. S. Andrianov, Towards calculation of the temperature fields from moving concentrated energy sources, *Fiz. Khim. Obr. Mat.* No. 1, 35–43 (1981).

HEAT CONDUCTION

- K. M. Abdullaev, V. S. El'darov and Sh. M. Manafov, Concerning the effect of pressure on thermal conductivity of aqueous electrolyte solutions, *Izv. VUZov, Energetika* No. 5, 67–72 (1981).
- L. M. Anishchenko and S. Yu. Lavrenyuk, Thermal regimes of sublayers in spraying of film coatings, *Fiz. Khim. Obr. Mater.* No. 2, 21–25 (1981).
- A. F. Astashov and N. V. Eto gorova, A temperature field of a cast under pressure crystallization conditions, *Litein. Proizv.* No. 2, 3–4 (1981).
- L. M. Berezovskaya, An unsteady-state temperature field in a long coaxial thermoemissive electrogenerating element, pp. 184–191, in *Dynamics and Stability of Mechanical Systems*, Kiev (1980).
- L. A. Brovkin, Towards the solution of a heat conduction equation for a semi-infinite body, *Izv. AN SSSR, Energet. Transp.* No. 2, 161–164 (1981).
- V. I. Devyatko, V. I. Panchishin and P. A. Rudchenko, Concerning the solution of plane boundary-value heat conduction problems on combined mathematical models pp.

HYDROMECHANICS

1. Boundary layer

- Yu. N. Ermak and V. Ya. Neiland, Effect of the thermody-

dynamic properties of a gas on hypersonic flow interaction with the boundary layer, *Trudy TsAGI Vyp.* 2079, 20–30 (1980).
 I. I. Lipatov, A flow past local spatial irregularities at the bottom of a laminar boundary layer in a weak hypersonic interaction regime, *Trudy TsAGI Vyp.* 2079, 3–19 (1980).
 V. I. Lysenko and A. A. Maslov, Laminar to turbulent supersonic boundary layer transition on surface cooling, *Zh. Prikl. Mekh. Tekh. Fiz.* No. 3, 30–36 (1981).
 N. E. Masyakin and M. N. Polyansky, Interaction of an injected gas jet with a supersonic free stream without formation of a three-dimensional zone of boundary layer separation, *Izv. Akad. Nauk SSSR, Mekh. Zhidk. Gaza* No. 3, 137–139 (1981).
 V. T. Movchan and V. I. Mamchuk, Towards calculation of a turbulent gradient-free boundary layer pp. 7–11, in *Applied Aerodynamics*, Kiev (1980).
 L. I. Raikin, Concerning the effect of initial boundary layer displacement thickness on the efficiency of conical diffusers, *Izv. VUZov, Energetika* No. 5, 62–66 (1981).
 V. I. Zhuk and O. S. Ryzhov, Concerning the stability of a freely interacting boundary layer, *Prikl. Mat. Mekh.* 45(3), 552–563 (1981).

2. Kinetic theory of gases and liquids

A. A. Abramov, M. N. Kogan and N. K. Makashev, Numerical study of the processes in highly non-equilibrium Knudsen layers, *Izv. Akad. Nauk SSSR, Mekh. Zhidk. Gaza* No. 3, 72–81 (1981).
 A. A. Pyarnpuu, V. I. Shematovich and G. I. Zmievskaia, Construction of the structural physical probability analog of collision processes in a rarefied gas, *Dokl. Akad. Nauk SSSR* 258(4), 815–818 (1981).
 Yu. I. Yalamov, I. N. Ivchenko and S. M. Muradyan, The theory of evaporation of spherical drops at arbitrary Knudsen numbers, *Dokl. Akad. Nauk SSSR* 258(5), 1106–1110 (1981).

NATURAL CONVECTION

M. A. Gorokhovskiy and V. P. Kashkarov, Effect of free convection on laminar jet development along a horizontal or inclined isothermal surface, *Vestnik AN KAZ. SSR* No. 12, 45–51 (1980).
 L. S. Oganessian, An approximate analysis of natural convection in a vertical plane channel, *Izv. Akad. Nauk Arm. SSR, Ser. Tekh. Nauk* 33(6), 31–36 (1980).

FORCED CONVECTION

A. D. Aralov, Calculation of heat transfer in axisymmetric jet impingement on a plane surface, *Vodosnabzh. San. Tekhnika* No. 10, 25 (1980).
 B. Yu. Bakhvalov, V. M. Eroshenko and L. I. Zaichik, Calculation of laminar flow heat transfer over the starting length of a plane channel with permeable walls, *Teplofiz. Vysok. Temp.* 19(1), 212–215 (1981).
 I. A. Barsky, V. I. Ryshkov and I. K. Shatalov, Heat transfer into oil and its cooling in a gas-turbine engine, *Energomashinoostroenie* No. 5, 9–12 (1981).
 A. M. Bepalov, M. I. Gorshkov, V. V. Zhdanov and A. G. Mikhalechenko, Study of heat transfer on a half-cone at large M and Re numbers, *Uchen. Zapiski TsAGI* 11(6), 134–137 (1980).
 M. N. Bodunov, Yu. N. Chugunov and R. D. Fakhrutdinov, Experimental study of heat transfer in the rotor of a radial-axial turbine pp. 14–19, in *High-Temperature Cooled Gas Turbines of Aircraft Engines*, Kazan (1980).
 N. I. Buleev and R. Ya. Mironovich, Heat transfer in a longitudinal liquid flow through a triangular grid of rods, *Vopr. Atomn. Nauki Tekh., Ser. Fiz. Tekh. Yadern. Reaktor.* Vyp. 4, 73–88 (1980).
 E. P. Dyban, A. A. Lesnikovskiy and A. I. Mazur, Comparative

efficiency of some methods of heat transfer intensification in longitudinal flow around a cylinder, *Prom. Teplotekh.* 3(3), 19–26 (1981).

A. L. Ermakov, V. M. Eroshenko, L. I. Zaichik and L. S. Yanovsky, Effect of oblique injection on friction and heat transfer in a turbulent boundary layer on a permeable surface pp. 11–17, in *Applied Aerodynamics*, Kiev (1980).
 A. V. Furman, Insulation as a means of providing a way for stable heat transfer of high-viscous petroleum pumped through underground pipelines, *Izv. VUZov, Neft Gaz* No. 5, 66–70 (1981).
 A. V. Karakin, L. I. Lobkovskiy and V. P. Myasnikov, Concerning the effect of convection in a saturated porous medium on the behaviour of geometric gradient in the upper crust beds, *Dokl. Akad. Nauk SSSR* 258(5), 1075–1079 (1981).
 V. A. Kazaryan, B. I. Myznikova, A. A. Nepomnyashchii et al., Numerical study of convective heat transfer of liquid hydrocarbons when stored in underground reservoirs, *Izv. AN SSSR, Mekh. Zhidk. Gaza* No. 2, 142–148 (1981).
 I. S. Kochenov and V. F. Faliy, Unsteady-state heat transfer in channels, *Izv. AN SSSR, Energet. Transp.* No. 2, 143–149 (1981).
 A. A. Kochubei and A. A. Ryadno, Unsteady-state heat transfer in channels, *Izv. AN SSSR, Energet. Transp.* No. 1, 155–158 (1981).
 G. A. Kogan and A. A. Dergach, Experimental study of heat transfer in rotating gaps and bends, *Izv. VUZov, Aviat. Tekh.* No. 1, 96–98 (1981).
 L. I. Kolykhan, A. V. Sheinina, O. S. Vasilevich and Yu. P. Pavlov, Thermohydraulic characteristics of rough annular channels when cooled by a dissociating heat agent. II. Heat transfer, *Vestsi Akad. Navuk BSSR, Ser. Fiz.-Energet. Navuk* No. 2, 99–104 (1981).
 V. A. Medvedev and Yu. I. Akimov, Heat transfer and resistance of convective tube bundles with double profile spacers pp. 92–96, in *Improvement of Power Plants and Optimization of Their Parameters*, Saratov (1980).
 V. K. Migai and P. G. Bystrov, Heat transfer in shaped tubes, *Teploenergetika* No. 3, 55–59 (1981).
 R. M. Petrichenko, Heat transfer intensity in oil cooling of internal-combustion engine pistons, *Dvigateloostroenie* No. 12, 16–18 (1980).
 V. M. Repukhov and I. T. Shvets, Computer calculation of the combined gas turbine blade cooling system characteristics, *Prom. Teplotekh.* 3(3), 13–18 (1981).
 Yu. A. Sozin, Heat transfer in coordinated oscillations of thermal load and heat agent flow rate, *Izv. VUZov, Aviat. Tekh.* No. 1, 100–102 (1981).
 V. S. Travkin, Unsteady-state thermal regime in a tube with a heat conducting shell under the third-kind nonlinear boundary condition, *Prom. Teplotekh.* 3(2), 27–30 (1981).

PHASE CHANGES

1. Boiling and evaporation
 B. R. Bergelson, B. R. Leongardt, A. P. Potapov and V. A. Sherstnev, Critical heat loads in tubes under the conditions of subcooled boiling and low pressures, *Teploenergetika* No. 4, 11–14 (1981).
 A. R. Blokh, A. E. Mysak, S. I. Gorbenko and M. A. Altshtuler, Study of the mechanism of transfer in the surface layer of oil during evaporation of a dispersed medium, *Kolloid. Zh.* 43(3), 419–423 (1981).
 V. E. Doroshchuk, Some specific features of the heat transfer crisis in circular tube flow of a steam–water mixture, *Teploenergetika* No. 4, 4–5 (1981).
 S. K. Dymentko and A. A. Kurilenko, Film boiling heat transfer of subcooled hydrogen under conditions of natural convection, *Gas-and Thermodynamics of Multiphase Flows in Power Plants* Vyp. 3, 112–117 (1980).
 A. A. Ivashkevich, Semiempirical formula for a critical heat flux in subcooled water boiling in a tube, *Teploenergetika* No. 5, 66–67 (1981).

- S. A. Kovalev and V. A. Lenkov, Concerning the boiling crisis mechanism on a porous surface, *Teploenergetika* No. 4, 8–11 (1981).
- V. Yu. Nezgada, Analysis of the boiling kinetics of superheated liquid and its spraying process pp. 93–109, in *Ventilation and Air Conditioning*, Riga (1980).
- V. K. Orlov and G. P. Kuzmenko, Heat transfer in film boiling of cryogenic liquids in a channel with smooth intermittent ribs, *Teploenergetika* No. 4, 20–22 (1981).
- A. A. Samokhin and A. B. Uspensky, Laser radiation-induced evaporation of substance, *Fiz. Khim. Obr. Mater.* No. 3, 3–11 (1981).
- I. P. Smogalev, Calculation of critical heat fluxes in subcooled water flow at small velocity, *Teploenergetika* No. 4, 14–17 (1981).
- V. I. Tolubinsky, V. A. Antonenko and Yu. N. Ostrovsky, Steam generation heat transfer in thin films, *Prom. Teplotekh.* 3(3), 9–13 (1981).
- 2. Condensation**
- Yu. Ya. Kachuriner, A. M. Trevgoda and R. M. Yablonik, Calculation of spontaneous condensation in two-dimensional supersonic flow of moist vapour, *Gas- and Thermodynamics of Multiphase Flows in Power Plants* Vyp. 3, 86–95 (1980).
- I. B. Korsun, K. Sh. Shuster, V. I. Mitkalinyi *et al.*, Study of heat transfer in condensation of zinc and potassium chlorine salt vapours, *Izv. VUZov, Chernaya Metallurgiya* No. 1, 121–124 (1981).
- 3. Crystallization, solidification and freezing**
- A. A. Akhamov, A. G. Gafarov and V. I. Lebedev, Towards the theory of crystallization of simple liquids, *Dokl. Akad. Nauk Tadzh. SSR* 23(7), 368–372 (1980).
- N. G. Berezhnyak and A. A. Sheinina, Effect of helium admixture on hydrogen solidification conditions, *Fiz. Nizk. Temp.* 7(6), 685–691 (1981).
- E. M. Ivanov, An approximate calculation of the melt layer crystallization on a substrate, *Fiz. Khim. Obr. Mater.* No. 2, 79–84 (1981).
- Ya. Ya. Klyavin, V. A. Berzin, M. E. Broka and E. V. Turke, Solidification of a continuous ingot under intensive heat transfer conditions in a liquid and crystallizing metal, pt. 2. The estimation system and results, *Izv. Akad. Nauk Latv. SSR, Ser. Fiz. Tekh. Nauk* No. 3, 46–52 (1981).
- A. M. Meirmanov, An example of the absence of a classic solution to a Stefan problem, *Dokl. Akad. Nauk SSSR* 258(3), 547–549 (1981).
- B. V. Mil and A. V. Butashin, Specific features of calcium-gallium-germanium garnet crystallization, *Trudy Inst. Elektr. Upravl. Mashin* Vyp. 82, 44–52 (1980).
- G. A. Morozova, B. A. Dmitrevsky, L. I. Akimov and B. A. Kipyev, Stepwise crystallization of calcium nitrate from nitric acid extraction of phosphates, *Zh. Prikl. Khim.* 54(6), 1217–1221 (1981).
- I. L. Povkh, P. F. Zavgorodnii, F. V. Nedopekin *et al.*, Numerical investigation of specific features of the liquid-solid two-phase region formation with regard for natural convection in solidifying melt, *Teplofiz. Vysok. Temp.* 19(1), 120–127 (1981).
- V. A. Tsurko, Construction and substantiation of difference schemes with front straightening for multifront Stefan-type problems, *Vestsi Akad. Nauk BSSR, Ser. Fiz.-Mat. Nauk* No. 3, 23–26 (1981).
- A. N. Verigin, A. A. Bagreev, L. V. Grishechkin and V. P. Kikot, The structural analysis of two-phase flows in crystallizers with a double circulating contour pp. 88–94, in *Modern Apparatus for Treatment of Heterogeneous Media*, Leningrad (1980).
- 4. Heat pipes**
- P. I. Bystrov, V. P. Kirienko, A. G. Kostornov *et al.*, Experimental investigation of the heat pipe-based caesium-vapour generator for employing in thermoemissive loop channels pp. 149–156, in *Thermophysical Researches. Heat Pipes*, pt. 1, Obninsk (1980).
- A. N. Fomenko, The bench for studying heat and mass transfer in capillary channels of a heat pipe model evaporation zone, *Izv. Akad. Nauk Latv. SSR, Ser. Fiz. Tekh. Nauk* No. 3, 56–62 (1981).
- A. N. Fomenko, Some results of heat and mass transfer investigation in rectangular capillary channels of the heat pipe evaporation zone, *Izv. Akad. Nauk Latv. SSR, Ser. Fiz. Tekh. Nauk* No. 3, 63–70 (1981).
- M. N. Ivanovsky, V. V. Privezentsev and B. A. Chulkov, The systems of liquid transport in low-temperature elevated-power heat pipes pp. 68–82, in *Thermophysical Researches. Heat Pipes*, pt. 1, Obninsk (1980).
- V. V. Prosvetov, A. P. Kudryavtsev and L. M. Prorok, On effervescence of liquid metals in capillary-porous structures pp. 117–122, in *Thermophysical Researches. Heat Pipes*, pt. 1, Obninsk (1980).
- G. A. Savchenkov, N. I. Glushenko, V. G. Kunakov *et al.*, Study of heat transfer and hydrodynamics in low-temperature thermosiphons pp. 69–75, in *Thermophysical Researches. Heat Pipes*, pt. 2, Obninsk (1980).
- E. N. Shevchuk and N. V. Chistopiyanova, Study of near-sonic flow in a vapour channel of a high-temperature heat pipe at an arbitrary law of heat supply to the heating zone, *Prom. Teplotekh.* 3(3), 52–57 (1981).
- A. I. Stozhkov and V. V. Zaets, The procedure of compiling a terminological dictionary of heat pipes pp. 163–167, in *Thermophysical Researches. Heat Pipes*, pt. 2, Obninsk (1980).
- RADIATION**
- T. A. Adamov, Calculation of heat transfer between bodies with discretely emitting surfaces, *Teplofiz. Vysok. Temp.* 19(3), 663–666 (1981).
- A. V. Andreev, S. A. Akhmanov and V. L. Kuznetsov, Concerning the possibility of forced emission of channeled particles, *Pis'ma v Zh. Tekh. Fiz.* 7(11), 682–685 (1981).
- G. M. Guro, G. A. Kalyuzhnaya, T. S. Mamedov and L. A. Shepin, Effect of radiation on the kinetics of crystal growth process, *Trudy Fiz. Inst. im. Lebedeva AN SSSR* 124, 127–140 (1980).
- V. S. Kudryavtsev, G. D. Nikiforov, M. N. Galkin *et al.*, Optimization of heating conditions in melting of stannic-lead coating of printing boards by infrared radiation, *Svarochn. Proizvod.* No. 2, 2–3 (1981).
- A. L. Shelygin and N. M. Korolkov, Thermoradiative regeneration of coal adsorbent, *Zh. Prikl. Khim.* 54(6), 1426–1428 (1981).
- COMBINED HEAT AND MASS TRANSFER**
- K. P. Denisov, A. P. Lukovsky, L. P. Ledneva *et al.*, Experimental study of the effect of gas injection velocity on heat and mass transfer processes in the gas volume of a container, *Izv. VUZov, Aviats. Tekh.* No. 1, 84–86 (1981).
- Yu. T. Glazunov, The general variational principle of nonlinear phenomena of intercombined heat and mass transfer, *Izv. Akad. Nauk Latv. SSR, Ser. Fiz. Tekh. Nauk* No. 2, 90–100 (1981).
- A. V. Gudkovsky, A. B. Karasev and T. V. Kondranin, Concerning the non-monotonous dependence of a convective heat flux on the velocity of non-transparent admixture injections into the emitting H–He shock layer, *Izv. Akad. Nauk SSSR, Mekh. Zhidk. Gaza* No. 3, 106–113 (1981).
- Yu. N. Kryuchkov, Towards the analysis for boundary conditions in calculations of unsteady-state heat and mass transfer processes, *Teplofiz. Vysok. Temp.* 19(2), 335–338 (1981).
- K. V. Prushkovsky and V. V. Ivanov, Radiative-convective heat transfer between a permeable surface and gas flow, *Izv.*

Sev.-Kavk. Nauch. Tsentra Vyssh. Shkoly, Tekh. Nauki No. 4, 81–83 (1980).

M. G. Vasiliev and V. S. Yuferev, Radiative–conductive heat transfer in a thin semitransparent plate in the light-guide approximation with temperature and frequency-dependent absorptance, *Prikl. Mat. Tekh. Fiz.* No. 1, 98–103 (1981).

O. N. Vazhenin, Mathematical simulation of heat and mass transfer in oscillating periodic flows, *Prom. Teplotekh.* 3(2), 45–50 (1981).

HIGH-TEMPERATURE THERMOPHYSICS

1. Combustion and detonation processes

A. P. Aldushin and S. G. Kasparyan, Effect of heat losses on combustion wave stability, *Fiz. Gor. Vzryva* 17(2), 74–77 (1981).

V. K. Baev, A. N. Bazhaikin, I. V. Boldyrev *et al.*, Delay of benzene ignition on injection into a model of the engine combustion chamber, *Fiz. Gor. Vzryva* 17(2), 28–35 (1981).
V. Ya. Basevich, S. M. Kogarko, V. T. Gontkovskaya and V. A. Dubovitsky, Application of the kinetic mechanism of hydrocarbon burning to model calculation of oxidizing pyrolysis, *Teor. Osnovy Khim. Tekhnol.* 15(3), 449–453 (1981).

M. E. Derevyaga and L. N. Stesik, Effect of pressure on rate of burning and oxidation of molybdenum, *Fiz. Gor. Vzryva* 17(2), 64–68 (1981).

B. G. Diyachkov, E. A. Patskov and I. Ya. Polonsky, Calculation of current–voltage characteristics of electric gas burners, *Fiz. Gor. Vzryva* 17(2), 148–152 (1981).

G. S. Dragaen, T. N. Kadyrov, A. A. Malgota *et al.*, Experimental determination of the dissociative recombination coefficient, *Fiz. Gor. Vzryva* 17(1), 144–147 (1981).

A. B. Fialkov, V. K. Muravlev and B. S. Fialkov, Electric field effect on radiation of C_2^+ and CH^+ radicals in hydrocarbon flames, *Fiz. Gor. Vzryva* 17(2), 152–154 (1981).

B. S. Fialkov and A. G. Zakharov, Ionization processes in burning of solid carbon-containing fuels, *Teplofiz. Vysok. Temp.* 19(1), 216–218 (1981).

N. B. Fridman, M. M. Kitain and A. S. Shteinberg, Towards the mechanism of bubble ignition, *Dokl. Akad. Nauk SSSR* 258(4), 961–965 (1981).

L. A. Gaponenko, S. N. Buinovskiy, Yu. I. Tulupov and T. A. Yakovleva, A model of single boron particle ignition in moist media, *Fiz. Gor. Vzryva* 17(1), 13–19 (1981).

M. F. Gogulya, I. M. Voskoboinikov and N. G. Demchenko, The Mach interaction of detonation waves in nitromethane, *Fiz. Gor. Vzryva* 17(1), 153–155 (1981).

E. B. Gordon, M. S. Drozdov and V. Ch. Bokun, Experimental study of carbon bisulphide and oxygen mixture self-ignition, *Fiz. Gor. Vzryva* 17(2), 22–27 (1981).

A. M. Grishin, A. S. Yakimov and V. L. Mikov, Ignition regimes of a glass–plastic tube with account for mixed convection of oxidant, *Fiz. Gor. Vzryva* 17(2), 13–22 (1981).

T. P. Ivleva and K. G. Shkadinsky, Concerning the unstable mode of combustion of a thin plate, *Fiz. Gor. Vzryva* 17(1), 138–140 (1981).

V. P. Karpov and E. S. Severin, Turbulent burning of hydrogen–hydrocarbon air mixtures, *Fiz. Gor. Vzryva* 17(1), 137–138 (1981).

A. S. Khachiyan, N. N. Esaulenko and D. V. Krivenkov, Specific features of heat transfer between working body and combustion-side bottom of the diesel cylinder head at different diameters of the combustion chamber in a piston, *Dvigatellostroenie* No. 1, 15–17 (1981).

A. M. Khanov and I. V. Yakovlev, Interaction of the elements of fibrous composite material under the conditions of orthogonal deposition front propagation in explosive welding, *Fiz. Gor. Vzryva* 17(2), 137–142 (1981).

S. A. Klevtsur, Yu. N. Lokhov and M. P. Spasski, On the mechanism of burning of diamond micropowders, *Fiz. Gor. Vzryva* 17(2), 77–82 (1981).

V. A. Konstantinovskiy, Effect of H_2 addition into the main flow on the base pressure in supersonic burning, *Fiz. Gor. Vzryva* 17(2), 154–156 (1981).

V. N. Lebedev and A. M. Klimov, Extension of a nonadiabatic flame in burning of mixed gases and volatile explosives, *Fiz. Gor. Vzryva* 17(2), 68–73 (1981).

A. I. Lesnikovich and S. A. Vorobieva, Estimation of the effect of additives on the burning rate of heterogeneous condensed systems based on some formal relationships, *Fiz. Gor. Vzryva* 17(2), 48–55 (1981).

A. A. Malyshev, A. L. Kuzmenko and G. I. Novikov, Relationship between the thermal decomposition rate of KIO_3 and its mass in a melt pp. 47–49, in *Heat and Mass Transfer: Physical Fundamentals and Research Methods*, Minsk (1980).

A. D. Margolin and V. G. Krupkin, Concerning the critical conditions of diffusive combustion, *Fiz. Gor. Vzryva* 17(2), 3–13 (1981).

E. A. Meshcheryakov and V. A. Sabelnikov, Hydrogen burning in a supersonic turbulent channel flow with co-current supply of fuel and oxidant, *Fiz. Gor. Vzryva* 17(2), 55–64 (1981).

V. A. Mogilev, A. G. Ivanov, Yu. A. Fateev *et al.*, Response of thin-walled tubes to internal explosive local loading (Communication I), *Fiz. Gor. Vzryva* 17(2), 123–127 (1981).

E. A. Nekrasov, Yu. M. Maksimov and A. P. Aldushin, Calculation of the combustion wave parameters in the Zr–Al system, *Fiz. Gor. Vzryva* 17(2), 35–41 (1981).

M. Ya. Pural, An ionized air used for burning intensification, *Izv. VUZov, Energetika* No. 4, 110–112 (1981).

G. S. Sukhov and L. P. Yarin, Towards the theory of burning of non-miscible liquid jets, *Fiz. Gor. Vzryva* 17(2), 42–48 (1981).

T. V. Vilensky, V. S. Malysheva and D. M. Khzmalyan, Calculation of the combustion process in furnace chambers with opposite mutually displaced burners, *Teploenergetika* No. 7, 51–53 (1981).

I. D. Zimina and V. I. Svetsov, Passivation of the metal surface during burning of a high-frequency electrodeless discharge in a chlorine–oxygen mixture, *Fiz. Khim. Obr. Mat.* No. 2, 51–54 (1981).

2. Shock waves

A. I. Akimov, M. V. Piskareva and F. V. Shugaev, Density gradient growth in thermal inhomogeneity on shock wave propagation in it, *Izv. Akad. Nauk SSSR, Mekh. Zhid. Gaza* No. 3, 170–175 (1981).

A. B. Britan, Flow parameters in a shock tube with a cone adapter in the diaphragm region. Flow behind an incident shock wave, *Teplofiz. Vysok. Temp.* 19(3), 670 (1981).

K. G. Ivanov, Head-on collision of symmetric shock waves in magnetic hydrodynamics, *Pis'ma v Zh. Tekh. Fiz.* 7(10), 595–598 (1981).

N. I. Tillyaeva, Calculation of supersonic gas flow past a channelled body in regimes with a detached shock wave, *Izv. VUZov, Mekh. Zhidk. Gaza* No. 3, 160–163 (1981).

I. A. Znamenskaya, M. A. Ibragim and F. V. Shugaev, Shock wave oscillations on reflection from a resonator, *Akust. Zh.* 27(3), 373–376 (1981).

3. Low temperature plasma

Yu. S. Akishev, A. I. Zakharchenko, I. I. Gorodnicheva *et al.*, Nitrogen heating in a self-maintained glow discharge, *Zh. Prikl. Mekh. Tekh. Fiz.* No. 3, 10–13 (1981).

I. I. Aksenov, Yu. P. Antufiev, V. G. Bren *et al.*, Effect of the magnetism of vacuum arc plasma electrons on the synthesis reaction kinetics of nitride-containing coatings, *Zh. Tekh. Fiz.* 51(2), 303–309 (1981).

S. P. Aktershev, A. V. Kirillin and A. A. Rakovets, Experimental study of a cryogenic glow discharge plasma in helium. Determination of the constant of $He(2^3S)$ level excitation, *Teplofiz. Vysok. Temp.* 19(3), 475–484 (1981).

A. F. Aleksandrov, V. I. Artamonov, O. I. Surov and I. B.

- Timofeev, Concerning the nature of reverse currents in high-current discharges, *Zh. Tekh. Fiz.* **51**(6), 1294–1296 (1981).
- N. L. Aleksandrov, F. I. Vysikailo, R. Sh. Islamov *et al.*, A mathematical model of a discharge in the $N_2:O_2 = 4:1$ mixture, *Teplofiz. Vysok. Temp.* **19**(3), 485–490 (1981).
- R. Kh. Amirov, E. I. Asinovsky and V. V. Markovets, The diagnostics method of ionization dynamics in a nanosecond discharge, *Teplofiz. Vysok. Temp.* **19**(2), 424–425 (1981).
- A. S. Anshakov, M. F. Zhukov, G. A. Gorlev *et al.*, Erosion of copper-tungsten anodes in linear plasmotrons, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* 1, 68–70 (1981).
- F. G. Baksht and O. G. Rutkin, The theory of a subsonic plasma flow past a plane electrode, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* 1, 127–130 (1981).
- S. A. Belkov and V. N. Tsytoich, Towards plasma thermal conductivity in a magnetic field with destroyed magnetic surfaces, *Kratk. Soobsh. po Fizike No.* 11, 3–6 (1980).
- V. P. Belosheev, Study of the development and structure dynamics of a barrier discharge within a large volume, *Prikl. Mat. Tekh. Fiz. No. 2*, 43–48 (1981).
- P. F. Bulannyi and S. P. Polyakov, Effect of arc burning regimes on specific heat flux and current density distribution over the anode, *Zh. Tekh. Fiz.* **51**(3), 541 (1981).
- P. F. Bulannyi and S. P. Polyakov, Towards experimental study of the heat flux and electric current densities on the anode of a high current stabilized arc, *Teplofiz. Vysok. Temp.* **19**(3), 497–501 (1981).
- A. F. Bunkin and N. I. Koroteev, Nonlinear laser spectroscopy of gases, gas flows and low-temperatures plasma, *Usp. Fiz. Nauk* **134**(1), 93–123 (1981).
- A. V. Dobkin and I. V. Nemchinov, Radiation of plasma produced by the attack of fast-moving particles on foil in vacuum, *Zh. Prikl. Mekh. Tekh. Fiz. No. 3*, 14–18 (1981).
- A. M. Dorodnov, S. A. Muboyadzhan, Ya. A. Pomelov and Yu. A. Strukov, The Hall plasma accelerator with a cold cathode, *Prikl. Mat. Tekh. Fiz. No. 1*, 35–41 (1981).
- V. G. Dudnikov and G. I. Fiksel, A surface-plasma source of intensive flows of accelerated atoms, *Fiz. Plazmy* **7**(2), 283–288 (1981).
- O. I. Egorova, E. A. Kolobova, V. K. Krukovsky and V. V. Lebedev, Interaction of gaseous reagents with coal in a glow discharge, *Khim. Tvyord. Topliva No.* 3, 60–63 (1981).
- E. N. Eremin, A. N. Malisev, V. L. Ivanter and V. M. Belova, Study of reactions of carbon dioxide recovery by hydrogen in a glow discharge. III, *Zh. Fiz. Khim.* **55**(5), 1365–1366 (1981).
- S. A. Genkin, Yu. D. Korolev, V. G. Rabotkin and A. P. Khuzeev, Study of the spatial structure of a volumetric discharge initiated by an electron beam in air at mean pressures, *Fiz. Plazmy* **7**(3), 598–603 (1981).
- V. K. Kalashnikov and Yu. V. Sanochkin, Discharge in an accelerator with the closed EIH-drift of isothermal electrons, *Fiz. Plazmy* **7**(2), 303–311 (1981).
- V. K. Kalashnikov and Yu. V. Sanochkin, Effect of the working substance supply direction on the characteristics of discharge with a closed drift of electrons, *Teplofiz. Vysok. Temp.* **19**(3), 461–468 (1981).
- A. S. Kamrakov, N. P. Kozlov and Yu. S. Protasov, Experimental study of a plasma focus in erosion-plasma accelerators. IV. Dynamics and radiation of localized plasmadynamic discharges, *Zh. Tekh. Fiz.* **51**(4), 736–751 (1981).
- A. I. Karchevsky and E. P. Potanin, "Ionic" mechanisms of isotope separation in a high-frequency system with a running magnetic field, *Fiz. Plazmy* **7**(2), 318–324 (1981).
- D. M. Karfidov, N. A. Lukina and K. F. Sergeichev, Air breakdown initiated by the nonuniform electrical field of a superhigh-frequency wave, *Fiz. Plazmy* **7**(2), 312–317 (1981).
- Yu. L. Klimontovich and S. A. Sukhin, Calculation of the Starn profiles of spectral lines by the kinetic plasma theory method, *Izv. SO AN SSSR No. 3, Ser. Tekh. Fiz. Vyp.* 1, 99–101 (1981).
- N. N. Koval, N. P. Kondratieva, Yu. E. Kreindel *et al.*, Specific features of an arc contracted discharge with cold cathodes in the regime of repeating pulses, *Zh. Tekh. Fiz.* **51**(1), 200–204 (1981).
- V. P. Kovtun, Nonpotential oscillations of an active molecular plasma in a variable electric field, *Prikl. Mat. Tekh. Fiz. No. 1*, 71–74 (1981).
- A. G. Krasnyukov, V. G. Naumov, L. V. Shachkin and V. M. Shashkov, Concerning the velocity of three-body adhesion of electrons to an oxygen molecule in a semi-self-maintained discharge, *Fiz. Plazmy* **7**(3), 587–591 (1981).
- Ya. R. Kucherov, A. S. Pustogarov, A. P. Khalboshin and O. D. Zaisky, The structure of a zirconium plasmatron cathode, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* 1, 125–127 (1981).
- V. M. Lelevkin, E. P. Pakhomov and V. S. Engelsht, Calculation of the laminar arc plasma flow development in a cylindrical channel, *Teplofiz. Vysok. Temp.* **19**(2), 253–260 (1981).
- A. A. Levitsky, A program for the solution of a direct kinetic problem pp. 115–132, in *Synthesis in a Low-Temperature Plasma*, Moscow (1980).
- A. A. Levitsky, L. S. Polak, N. M. Rytova and D. I. Slovetsky, Simulation of the CO_2 decomposition kinetics in non-equilibrium electric discharges, *Khim. Vysok. Energ.* **15**(3), 276–278 (1981).
- Yu. I. Lysikov, Towards calculation of dynamics of a charged gaseous cloud in a magnetic field, *Prikl. Mat. Tekh. Fiz. No. 1*, 66–71 (1981).
- A. I. Maksimov, V. M. Menagarishvili and V. V. Rybkin, Analysis of the energy distribution functions of electrons, cross-sections and coefficients of the rates of processes with participation of electrons in the oxygen plasma, *Fiz. Plazmy* **7**(2), 289–295 (1981).
- N. M. Maslennikov, The mechanism of current passage in the cathode region of a semi-self-maintained discharge in nitrogen, *Zh. Tekh. Fiz.* **51**(2), 284–288 (1981).
- V. A. Nevrovsky, Dynamics of thermal anode instability development on electric breakdown in vacuum, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* 1, 130–132 (1981).
- A. V. Nikolaev, V. A. Sheremetiev, V. F. Tuzhikov *et al.*, Investigation of the refining processes of nickel-based alloys undergoing vacuum plasma-arc remelting, *Fiz. Khim. Obr. Mater. No. 2*, 46–50 (1981).
- V. I. Obukhov, Study of the electric processes in a spark discharge, *Izv. VUZov, Energetika No.* 5, 16–22 (1981).
- A. M. Orishich, A. G. Ponomarenko and V. N. Snytnikov, Effect of a cathode layer on the current-voltage characteristics of a discharge excited by an electron beam, *Prikl. Mat. Tekh. Fiz. No. 2*, 37–43 (1981).
- V. N. Pisarevsky, Calculation of the underwater spark discharge parameters of electrohydraulic machines, *Elektron. Obrabot. Materialov No.* 2, 83–85 (1981).
- T. V. Rezhichikova, V. N. Troitsky, N. V. Alekseev and Yu. M. Shulga, $Mo(CO)_6$ decomposition in a nitrogen plasma flow of a superhigh-frequency discharge, *Khim. Vysok. Energ.* **15**(2), 160–164 (1981).
- N. A. Rubtsov and N. M. Ogurechnikova, Investigation of an electric arc in a turbulent gas flow, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* 1, 54–59 (1981).
- V. A. Saenko and A. I. Vladimirov, Charge ion composition in a reflecting discharge, *Zh. Tekh. Fiz.* **51**(2), 419–423 (1981).
- R. K. Safiullin and L. Ya. Egorov, Calculation of vibrational temperatures and population inversion in a gas flow moving through an electric discharge, *Teplofiz. Vysok. Temp.* **19**(2), 443 (1981).
- V. A. Shuvalov, Study of the structure of plasma formations generating at the body surface in a partially ionized gas flow, *Prikl. Mat. Tekh. Fiz. No. 2*, 48–54 (1981).
- V. A. Shuvalov, M. G. Bystritsky and A. E. Churilov, Effect of the disturbed zone structure near a body in a rarefied plasma flow on scattering of electromagnetic waves, *Zh. Tekh. Fiz.* **51**(2), 310–315 (1981).
- V. N. Skrebov and A. I. Eikhvald, Acoustic oscillations in an inhomogeneous gas discharge plasma, *Zh. Tekh. Fiz.* **51**(2), 297–302 (1981).

- V. N. Skrebov and A. I. Skripchenko, Interferometric studies of the process of pulse discharge channel formation at moderate pressures, *Teplofiz. Vysok. Temp.* **19**(3), 469–474 (1981).
- V. V. Tanaev, An integral model of electric arc slippage, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* **1**, 110–113 (1981).
- Yu. M. Tokunov, E. I. Asinovsky and L. M. Vasilyak, Dynamics of a nanosecond discharge development in nitrogen and laser radiation generation, *Teplofiz. Vysok. Temp.* **19**(3), 491–496 (1981).
- B. A. Uryukov, Theoretical investigations of an electric arc in a turbulent flow, *Izv. SO AN SSSR No. 3, Ser. Tekh. Nauk Vyp.* **1**, 87–98 (1981).
- A. B. Vatazhin, Development of thermal fields in an electric arc ignitable on a point electrode in a stalling gas flow, *Izv. Akad. Nauk. SSSR, Mekh. Zhidk. Gaza No. 2*, 91–99 (1981).
- V. A. Veretennikov, V. A. Gribkov, E. Ya. Kononov *et al.*, Study of the dynamics of a low-inductive vacuum spark discharge by the laser shadow method, *Fiz. Plazmy* **7**(2), 455–463 (1981).
- L. M. Volkova, A. M. Devyatov, V. M. Shibkov and L. V. Shibkova, Effect of metastable states on pulse discharge development in helium, *Fiz. Plazmy* **7**(2), 296–302 (1981).
- R. N. Vorobiev, V. N. Zverev, N. P. Poluektov and V. N. Kharchenko, Experimental study of a rotating pulse discharge plasma, *Fiz. Plazmy* **7**(3), 516–522 (1981).
- F. I. Vysilailo and A. P. Napartovich, A stationary one-dimensional model of discharge in an electronegative gas, *Teplofiz. Vysok. Temp.* **19**(2), 421–424 (1981).

RHEOPHYSICS

- R. Yu. Amenzade and V. G. Nasibov, Waves in a non-uniform viscoelastic tube with a flowing liquid, *Dokl. Akad. Nauk Az. SSR* **36**(8), 16–19 (1980).
- V. V. Chenikov, I. P. Gruba and Yu. G. Gruba, Rheological model of a tobacco mass, *Izv. VUZov, Pishch. Tekhnol.* No. 3, 118–120 (1981).
- I. M. Dunaev, Thermal viscoelasticity of elastomers (Communication 3), *Trudy Krasnodarsk. Politekh. Inst. Vyp.* **101**, 30–47 (1980).
- G. B. Froishteter and S. D. Mamchenko, Flow of a nonlinear viscoplastic liquid (plastic lubricants) in an annular gap of a scraper, *Neftepererabotka Neftekhim. Vyp.* **19**, 57–62 (1980).
- L. V. Kislaya, V. A. Marichenko and N. V. Vdovenko, Rheological characteristics of the batches of alcohol production, *Izv. VUZov, Pishch. Tekhnol.* No. 3, 60–63 (1981).
- G. P. Komogorov, Yu. A. Machikhin and Z. B. Kazumyan, Rheological properties of lavash dough, *Khlebopekar. Konditer. Prom.* No. 12, 25–27 (1980).
- A. S. Makarov and N. V. Polishchuk, Rheological properties of disperse systems based on aminoethox- and carboxyaerosil in decane and heptyl alcohol, *Ukr. Khim. Zh.* **46**(10), 1070–1073 (1980).
- S. R. Meschyan, Rheological properties of clay material of ground dams, *Inzh. Geologiya* No. 2, 34–40 (1981).
- V. V. Parkhomenko, V. Yu. Tretinnik, L. A. Kudra and V. L. Strelchin, Effect of water-soluble cellulose ethers on the rheological properties of mineral suspensions with a low content of disperse phase, *Kolloid. Zh.* **43**(3), 506–511 (1981).
- R. M. Sattarov, Diagnostics of relaxation properties of non-Newtonian media during their motion in tubes, *Izv. VUZov, Neft Gaz* No. 1, 47–50 (1981).
- V. V. Shishlyannikov, Convective heat transfer of a non-Newtonian liquid flow in a circular tube pp. 90–95, in *Rheology, Processes and Chemical Engineering Technology Apparatus*, Volgograd (1980).
- A. V. Shustov and Yu. G. Eismondt, Study of the cooling capability of aqueous polymer solutions, *Prom. Teplotekh.* **3**(3), 75–77 (1981).
- A. M. Sklyar, A. I. Gamzade, L. Z. Rogovina *et al.*, Study of rheological properties of diluted and moderately concentrated chitosan solutions, *Vysokomolek. Soedin. Ser. A*, **23**(6), 1396–1403 (1981).
- M. N. Tekich and M. V. Mitrovich, Wave flow of the non-Newtonian liquid films in the presence of a gas flow, *Teor. Osnovy Khim. Tekhnol.* **15**(3), 454–457 (1981).
- A. A. Trapeznikov and V. G. Vins, The capability of gelatine in spreading over the water surface and adsorption from aqueous solutions based on two-dimensional pressure measurements and rheological properties, *Kolloid. Zh.* **43**(3), 519–527 (1981).
- Yu. G. Yanovsky, The 11th All-Union Symposium on Polymer Rheology (Chronicle), *Vysokomolek. Soedin. Ser. A*, **23**(7), 1673–1674 (1981).
- G. V. Zhizhin, Pressure-gradient induced nonisothermal Couette flow of a non-Newtonian fluid, *Zh. Prikl. Mekh. Tekh. Fiz.* No. 3, 26–30 (1981).

HEAT AND MASS IN TECHNOLOGICAL PROCESSES

1. Drying

- V. I. Areshchenko, M. A. Bukhman and L. G. Romanov, Study of the flow structure in drying swirl chambers, *Kompleksn. Ispolz. Miner. Syr'ya* No. 11, 8–13 (1980).
- L. T. Bakhshieva, A. A. Zakharova, V. S. Saltykova *et al.*, Investigation of the process of glue composition drying in production of synthetic fur, *Izv. VUZov, Tekhnol. Legk. Prom.* **23**(6), 30–32 (1980).
- M. L. Faivishevsky and O. M. Vasilevsky, Testing of the AI-OP4 installation for blood drying, *Myasn. Industriya SSSR* No. 11, 18–20 (1980).
- A. S. Knyazev, V. V. Chulkov, V. S. Osina and G. N. Garpinchenko, On investigation of the parameters of raw material drying in rotor crushers, *Trudy VNII Tsementn. Mashinostr. Vyp.* **23**, 14–18 (1980).
- A. E. Maslov, V. V. Terentiev, K. B. Palchik *et al.*, Investigation of the process of drying diacetone-2-keto-L-gulononic acid hydrate as the object of control, *Khim.-Farmats. Zh.* **15**(6), 107–110 (1981).
- V. T. Mustyatsa, G. P. Ganya and A. S. Lupashko, Study of the cacao grit drying process, *Elektron. Obrabot. Materialov* No. 6, 70–74 (1980).
- G. S. Pankratov, V. I. Volchikov and V. M. Kataev, Study of the method for electrocontact drying of nonnutrative stock, *Myasn. Industr.* No. 11, 37–39 (1980).
- S. F. Rodina, Variation of the chemical composition of bird-cherry fruits in drying pp. 29–32, in *The Problems of Merchandising the Food-Stuffs and Public Catering*, Sverdlovsk (1980).
- V. I. Rogachevsky, Power optimization of drying equipment in light industry pp. 41–46, in *New Assortment and Improvement of the Production of Textile-Haberdashery Articles*, Moscow (1980).
- S. P. Rudobashta, A. N. Planovsky and Z. A. Mikhaleva, Study of the hygroscopic properties and mass conductivity of dried ceramic colloid capillary-porous materials, *Izv. VUZov, Khim. Khim. Tekhnol.* **24**(6), 765–769 (1981).
- V. S. Tyulyakov, V. Ya. Valuisly, I. T. Kretov and Yu. I. Shishatsky, Study of the granulometric composition of baking yeast in the process of drying, *Khlebopekar. Konditer. Prom.* No. 12, 35–36 (1980).

2. Heat and mass exchangers

- M. G. Ananievsky, E. T. Antropov and V. T. Karpukhin, Concerning the possible application in metallurgy of a gasdynamic laser with a high-temperature regenerative heat exchanger for heating a working body, *Teplofiz. Vysok. Temp.* **19**(2), 391–394 (1981).
- G. M. Belov, B. S. Bylinkin, P. A. Gorshenin *et al.*, Study of the heat exchanger model element from a ceramic-metal material, *Teplofiz. Vysok. Temp.* **19**(3), 624–629 (1981).
- E. V. Falchenko, V. N. Turik, V. G. Lipityuk *et al.*, A

- measuring complex for testing the hydraulic pipelines of collector-type heat transfer exchangers, *Konstr. Proizvodstvo Transp. Mashin Vyp.* 12, 103–106 (1980).
- R. A. Gorelik, Concerning determination of the efficiency of apparatus reservation in chemical-technological systems, *Teor. Osnovy Khim. Tekhnol.* 15(3), 471–473 (1981).
- V. M. Korotaev, Fundamentals of the heat exchanger optimization methods by the number of units of thermal power efficiency, *Izv. VUZov, Pishch. Tekhnol.* No. 2, 89–95 (1981).
- O. K. Krasnikova and D. A. Kirikov, Construction of heat exchangers from wire-finned tubes with exact operating parameters, *Khim. Neft. Mashinostroenie* No. 4, 8–10 (1981).
- V. O. Kremnev, Heating and moistening of air on contact with water in a centrifugal heat and mass exchanger, *Prom. Teplotekh.* 3(4), 36–39 (1981).
- Yu. V. Leonenok, V. E. Ved. and B. G. Shcherbina, Mass exchanger, *Vopr. Khim. Khim. Tekhnol. Vyp.* 61, 90–93 (1980).
- M. A. Maslikov, B. A. Matvienko, D. A. Stolyar and N. Yu. Tobilevich, Residence time of a liquid in boiling tubes of evaporators, *Izv. VUZov, Pishch. Tekhnol.* No. 3, 120–122 (1981).
- V. N. Mikhailovsky, Towards the choice of the type of a heat exchanger for diesel oil regeneration, *Trudy VNII Zhel.-Dor. Transporta Vyp.* 633, 135–138 (1980).
- E. P. Novikov, E. M. Kovalev and V. P. Sergeenkov, Heat transfer intensification in evaporators, *Khim. Neft. Mashinostroenie* No. 2, 16–17 (1981).
- A. M. Pizik and N. V. Ostapchuk, Aerodynamic resistance in convective preheaters of grain, *Izv. VUZov, Pishch. Tekhnol.* No. 2, 79–81 (1981).
- V. G. Rifert, P. A. Barabash, A. B. Golubev *et al.*, Heat transfer intensification in condensers with wire-finned horizontal tubes, *Kholod. Tekh.* No. 4, 23–25 (1981).
- V. V. Shchegolev and B. I. Brounshtein, On propagation of concentration waves in vertical disperse incompressible liquid flows (Calculation of heat exchangers), *Gas and Thermodynamics of Multiphase Flows in Power Plants Vyp.* 3, 58–68 (1980).
- L. K. Vukovich, A. D. Dimitrov and B. V. Baryshev, Thermal optimization of the double-stage recuperator operation, *Izv. VUZov, Energetika* No. 6, 60–64 (1981).
- V. V. Zotov, Temperature fields in smoke generators, *Izv. VUZov, Pishch. Tekhnol.* No. 1, 44–47 (1981).
- ### 3. Dispersed systems
- A. Agzamov, R. K. Azimov and P. R. Ismatullaev, Computer calculation of dynamic characteristics of thermal tubular humidity transformers of loose materials pp. 65–69, in *Researches in the Field of Power Engineering*, Tashkent (1980).
- A. N. Alabovskiy, A. A. Pochechun and V. P. Salo, Experimental study of the gas content of a bubbling zone in a submerged burning apparatus with a circulating tube, *Izv. VUZov, Energetika* No. 2, 105–107 (1981).
- M. V. Aleksandrov, M. F. Mikhalev, V. I. Kocherga *et al.*, Determination of the rational regime of pulse fluidization pp. 9–14, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- A. A. Aleksandrovskiy, Z. K. Galiakberov, L. A. Emikh *et al.*, Kinetics of binary composition mixing with accompanying crushing of a solid phase, *Teor. Osnovy Khim. Tekhnol.* 15(2), 227–231 (1981).
- V. A. Anistratenko and A. N. Prokhorov, Liquid flow motion velocity on plate trays with nonuniform gas phase distribution, *Izv. VUZov, Pishch. Tekhnol.* No. 2, 66–69 (1981).
- O. S. Balabekov, Concerning the mass transfer mechanism in devices with a movable packing pp. 50–54, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- O. S. Balabekov, N. A. Musin and M. P. Sharyguin, Simulation of the process of aerosol trapping in a three-phase suspended bed pp. 54–58, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- V. S. Berman, Concerning the group properties of the hyperbolic of two differential equations occurring in the mass transfer theory, *Izv. VUZov, Mekh. Zhidk. Gaza* No. 3, 55–63 (1981).
- R. Kh. Bilalov, N. U. Bakirov, I. I. Suleimanov and A. G. Usmanov, Heat transfer of a tube in a gas-liquid layer during ammonia chemisorption, *Heat and Mass Transfer in Chemical Engineering Technology Vyp.* 8, 42–44 (1980).
- V. I. Bodrov, Yu. I. Kudinov, Yu. F. Martemiyarov *et al.*, Mathematical description of adsorption accompanied by chemical reaction, *Teor. Osnovy Khim. Tekhnol.* 15(2), 281–285 (1981).
- V. G. Bogdevich and N. K. Ruban, Calculation of a two-phase gas liquid boundary layer pp. 39–44, in *Wall Flows With Free Surfaces*, Novosibirsk (1980).
- V. F. Borisov and M. V. Aleksandrov, Towards determination of the hydraulic resistance of a granular bed pp. 14–18, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- B. I. Brounshtein, V. Ya. Rivkind and I. V. Simakova, Mass and heat transfer to a moving droplet, *Gas and Thermodynamics of Multiphase Flows in Power Plants Vyp.* 3, 75–78 (1980).
- D. O. Bytev, V. A. Vasiliev, A. I. Zaitsev and Yu. M. Makarov, Calculation of loose material motion in devices with complex trajectories of a working body, *Izv. VUZov, Khim. Tekhnol.* 24(3), 372–377 (1981).
- D. O. Bytev, A. I. Zaitsev, Yu. I. Makarov and V. A. Severtsev, Calculation of the characteristics for motions of loose material thin layer over fixed surfaces of gravitational mixers and flowmeters, *Izv. VUZov, Khim. Khim. Tekhnol.* 23(11), 1437–1441 (1980).
- V. I. Deev, Yu. V. Gordeev, A. I. Pridantsev *et al.*, Hydraulic resistance of a two-phase helium flow under adiabatic conditions and with heat supply pp. 292–296, in *Heat Transfer 1978: Soviet Researches*, Moscow (1980).
- M. E. Deich and A. G. Andriets, Specific features of two-phase medium flow in diffuser channels, *Izv. VUZov, Energetika* No. 1, 100–104 (1981).
- A. L. Dorfman, Numerical simulation of two-phase flows with a viscous carrier phase, *Izv. Akad. Nauk SSSR, Mekh. Zhidk. Gaza* No. 3, 49–54 (1981).
- G. I. Dvoskin, S. V. Zhubrin, V. A. Kablikov *et al.*, Calculation of the depth of vertical gas jet penetration into liquid, *Trudy Mosk. Energ. Inst. Vyp.* 448, 87–96 (1980).
- V. M. Eroshenko, E. P. Zimin, Yu. A. Knopko and V. V. Forfutdinov, Experimental study of the two-phase helium flow structure, *Gas and Thermodynamics of Multiphase Flows in Power Plants Vyp.* 3, 117–121 (1980).
- V. L. Ganzha and G. I. Zhuravskiy, Study of the disperse filler layer destruction during saturated water steam filtration, *Vesti Akad. Nauk BSSR, Ser. Fiz.-Energ. Nauk* No. 2, 75–78 (1981).
- E. I. Gavrilov, The analytical procedure for calculation of non-ramming hydraulic transport of ash-slag material, *Teplotenergetika* No. 2, 73–76 (1981).
- N. I. Gelperin, V. M. Myasoedenkov, R. S. Fraiman *et al.*, Investigation of the operation of slot-type gas distributors during fluidization *Khim. Promysh.* No. 3, 171–172 (1981).
- V. A. Glinsky, I. O. Protodiyakonov and Yu. G. Chesnokov, A mathematical model for a sorption process in a fluidized bed with nonideal mixing of a solid phase, *Zh. Prikl. Khim.* 54(1), 107–111 (1981).
- V. A. Glinsky, I. O. Protodiyakonov and Yu. G. Chesnokov, Experimental study of the bubble lift and size growth rates in a fluidized bed by the roentgen survey method, *Zh. Prikl. Khim.* 54(1), 183–184 (1981).
- I. P. Goldaev and Yu. O. Kasiyanov, The effect of mixing formation scheme on the two-phase flow structure in a spray of centrifugal burner, *Gas and Thermodynamics of Multiphase Flows in Power Plants Vyp.* 3, 106–112 (1980).
- A. L. Gonor and N. V. Zolotova, Retardation and defor-

- mation of a liquid droplet in a gas flow, *Izv. Akad. Nauk SSSR, Mekh. Zhidk. Gaza* No. 2, 58–69 (1981).
- G. I. Gorelov and A. A. Zhirnov, A combustion swirlchamber with shaped face walls, *Izv. SO AN SSSR* No. 3, *Ser. Tekh. Nauk Vyp.* 1, 29–32 (1981).
- V. V. Grigoriev, A. S. Grigoriyants, V. K. Erofeev *et al.*, Intensification of mass transfer processes of liquid interacting with gases and gas mixtures of different assimilating capacity, *Gidroaromekh. i Teoriya Uprugosti Vyp.* 26, 89–94 (1980).
- V. A. Ippolitov, A physical model and calculation of heat transfer in the melt–gas–solid particle system, *Trudy Mosk. Energ. Inst. Vyp.* 476, 43–47 (1980).
- Yu. I. Khvastukhin, S. Kh. Zaguidullin, N. N. Teterina *et al.*, Investigation of clay–potassium slime granulation in a fluidized bed, *Khim. Tekhnol.* No. 2, 10–13 (1981).
- N. N. Kolev, A. L. Boev and R. D. Darakchiev, Concerning the coefficient of spreading of disordered packings below the floating point, *Teor. Osnovy Khim. Tekhnol.* 15(2), 299–301 (1981).
- G. A. Kondrashov, L. I. Kondrashova and M. I. Sukhina, Discharge of loose products from hoppers and bins, *Izv. VUZov, Pishch. Tekhnol.* No. 2, 82–84 (1981).
- V. M. Krasavin and V. D. Polugaevsky, The methods of thermal calculation of multisectional apparatus with coarse material fluidized bed, *Khim. Promysh.* No. 1, 47–48 (1981).
- R. S. Kuznetsky, Towards distribution of a sprayed liquid in a nonhomogeneous granular bed, *Teor. Osnovy Khim. Tekhnol.* 15(1), 138–140 (1981).
- M. Z. Maksimenko, Crushing of droplets in extractors with alternate motion of trays, *Teor. Osnovy Khim. Tekhnol.* 15(2), 310–311 (1981).
- N. A. Martsulevich, I. O. Protodiyakonov and P. G. Romankov, Kinetics of adsorption on a single particle in a turbulent liquid or gas flow, *Zh. Prikl. Khim.* 54(3), 618–622 (1981).
- V. K. Maskaeve, V. I. Petrov, A. P. Baskakov, I. I. Shishko, Study of the intensity of gas transfer between adjacent fluidized beds, *Teor. Osnovy Khim. Tekhnol.* 15(1), 68–72 (1981).
- S. G. Mazina and T. A. Priss-Titarenko, Specific features of transient characteristics of rectifying towers pp. 97–103, in *Intensification of Catalytic and Mass Transfer Processes in Petroleum Chemistry*, Moscow (1980).
- G. M. Mikhailov and L. S. Reva, The local wall heat transfer coefficient in a granular bed pp. 21–24, in *Rheology, Processes and Apparatus of Chemical Engineering Technology*, Volgograd (1980).
- V. I. Milashenko, S. V. Netunaev and B. I. Nigmatulin, Study of the effect of local contractions on liquid distribution in gas–liquid flows (Heat and mass transfer). *Gas and Thermodynamics of Multiphase Flows in Power Engineering Plants Vyp.* 3, 78–85 (1980).
- A. G. Mirzakhanyan, Hydrodynamic calculation of non-homogeneous fluidized bed apparatus, *Izv. Akad. Nauk Arm. SSR, Ser. Tekh. Nauk* 33(6), 22–25 (1980).
- A. O. Nekrasov and N. P. Tretiyakov, Study of absorbers with vertical contact grids for scrubbing of exhausted gas pp. 59–63, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- M. V. Nenko, M. I. Kurochkina and V. A. Rits, Towards the problem of determining the mass transfer coefficients in a liquid–solid body system, *Zh. Prikl. Khim.* 54(1), 187–189 (1981).
- B. I. Nigmatulin, V. I. Rachkov and Yu. Z. Shugaev, Investigation of the intensity of moisture entrainment from the liquid film surface in an ascending vapour–water mixture flow, *Teploenergetika* No. 4, 33–36 (1981).
- N. V. Parshikova, A spherical particle in a non-uniform viscous liquid flow, *Vestnik Moskov. Gos. Univ., Ser. 1, Mat., Mekh.* No. 3, 68–71 (1981).
- G. S. Raptunovich, I. M. Lyashkevich, V. P. Samtsov and S. P. Kutukov, Study of the kinetics of liquid phase supersaturation in water suspensions of the binding substance of different dispersity pp. 45–47, in *Heat and Mass Transfer: Physical Fundamentals and Research Methods*, Minsk (1980).
- V. N. Romanenko, Determination of the droplet formation frequency in a jet generator, *Fiz. Aerodispers. Sistem Vyp.* 20, 28–30 (1980).
- N. N. Rustambekov and I. P. Levsh, Investigation of adsorption (desorption) of gases in columns with a fluidized bed of sprayed packing (use of different-type packings) pp. 47–53, in *Processes and Apparatus of Chemical Productions*, Tashkent (1980).
- E. V. Ryabchuck, Geometry of a spray on jet injection into a fluidized bed pp. 56–61, in *Rheology, Processes and Apparatus of Chemical Engineering Technology*, Volgograd (1980).
- S. V. Ryzhkov and O. M. Khmara, Laser-anemometer study of the two-phase wall layers in triangular channels pp. 283–288, in *Heat Transfer. 1978: Soviet Researches*, Moscow (1980).
- D. Sabyrkhanov, O. S. Balabekov, A. Sh. Sharafiev *et al.*, Concerning the generalizing characteristic of a three-phase suspended bed structure pp. 65–71, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- D. Sabyrkhanov, V. F. Petin, S. S. Sermanizov and I. S. Bekibaev, Specific features of the hydrodynamics of apparatus with a vibrating packing pp. 71–77, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- F. E. Spokoinyi and Z. R. Gorbis, Specific features of sedimentation of fine-dispersed particles from a cooled gas flow on a heat-transfer surface in a transverse flow, *Teplofiz. Vysok. Temp.* 19(1), 182–199 (1981).
- Yu. A. Streltsov and V. V. Shchukin, Towards calculation of a multiserial fluidized bed reactor pp. 7–11, in *Chemical Engineering: Computation and Design of Machines and Equipment of Chemical Productions*, Moscow (1980).
- V. I. Subbotin, D. N. Sorokin, B. I. Nigmatulin *et al.*, Complex investigations of hydrodynamic characteristics of dispersed annular vapour–liquid flows pp. 272–279, in *Heat Transfer. 1978: Soviet Researches*, Moscow (1980).
- S. A. Svetlov, N. K. Shchikno, Yu. Kh. Lokshin and I. V. Chumakov, Study of application of fusible coatings to loose materials in continuously operating pulsing fluidized bed apparatus pp. 36–40, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).
- Yu. S. Teplitsky, A circulation–diffusion model of mixing of solid particles in a gas–fluidized bed, *Vestsi Akad. Nauk BSSR, Ser. Fiz.-Energ. Nauk* No. 2, 119–126 (1981).
- I. V. Tselinsky, V. F. Selivinov, V. N. Andreev *et al.*, Dynamics of adsorption of mononitroalkane potash salts from aqueous solutions on active carbon, *Zh. Prikl. Khim.* 53(12), 2749–2751 (1980).
- V. A. Tsibarov, Distribution of bubbles in gas suspension, *Vestnik LGU* No. 7, *Mat., Mekh. Astronomiya Vyp.* 2, 100–103 (1981).
- N. V. Tyabin and A. B. Golovanchikov, Estimation of the scale effect for mathematical simulation of the flow structure in apparatus with stirrers, *Izv. VUZov, Khim. Khim. Tekhnol.* 24(3), 361–365 (1981).
- V. V. Udod and V. P. Koval, Hydrodynamics of a two-phase monodisperse vortex, *Teor. Osnovy Khim. Tekhnol.* 15(2), 208–211 (1981).
- N. A. Vasiliev, I. O. Protodiyakonov and A. I. Ovchinnikov, A semi-batch adsorber for iodine sorption from industrial waters, *Zh. Prikl. Khim.* 54(1), 189–190 (1981).
- A. A. Vasin and L. N. Chernysheva, Geometrical and effective surfaces of phase contact in a partitioned bubbling reactor, *Teor. Osnovy Khim. Tekhnol.* 15(2), 286–288 (1981).
- V. B. Vedernikov, N. V. Penkov and G. B. Polykovsky, A statistic model for dust trapping in a cyclone, *Teor. Osnovy Khim. Tekhnol.* 15(1), 145–147 (1981).
- S. S. Volkova and L. A. Afanasieva, Determination of the maximum zone of contamination with solid aerosol under the torches of industrial plants, *Fiz. Aerodispers. Sistem Vyp.* 20,

40–45 (1980).

V. B. Yusupov, M. S. Pazyzbekov and L. Sh. Baltabaev, Hydrodynamic laws governing the operation of apparatus with a spouting bed of a sprayed spherical packing pp. 82–87, in *Modern Apparatus for the Treatment of Heterogeneous Media*, Leningrad (1980).

E. D. Zaitsev, Study of heat transfer and thermal conductivity of a vibrofluidized bed in a liquid medium, *Teor. Osnovy Khim. Tekhnol.* **15**(2), 292–295 (1981).

V. K. Zhuravley and E. Kh. Zuslina, On trapping of dust

particles by electrically charged water droplets in a turbulent flow pp. 34–40, in *Electrical Physics, Electrical Mechanics and Applied Electrical Power Engineering*, Alma-Ata (1980). Yu. P. Zolotin, Estimation of a vapour–liquid mixture by means of geometrical characteristics of a dispersed phase, *Izv. VUZov. Pishch. Tekhnol.* No. 1, 48–50 (1981).

Yu. V. Zuev, Refinement of the separate equations of the system which describes a two-phase turbulent jet pp. 63–66, in *Study of the Working Process in Engine Elements and Power Devices With a Two-Phase Working Body*, Moscow (1980).