

## CONTENTS LISTS

### JOURNAL OF ENGINEERING PHYSICS

(Published in the U.S.S.R. in Russian with English abstracts)

Volume XIV, No. 5

May, 1968

	<i>Page</i>
V. V. KRSNIKOV and M. S. SMIRNOV: Application of conjugate heat conduction problems with moving boundary to the analysis of drying processes	773
I. KUMAR: Conjugate heat transfer problem in laminar boundary layer with blowing	781
P. N. ROMANENKO, A. N. OBLIVIN and L. G. SHELEGOVA: Friction in the pre-separation and heat transfer in the separation region of turbulent boundary layer in diffusers with cooled walls and heated air flow	792
G. A. BABALYAN and M. KH. AKHMADEEV: Effect of the diffusion rate of surface-active substances upon petroleum demulsification	797
V. A. BORODULYA and A. I. ZHELTOV: Peculiarities of electric resistance of conducting particle boundary layers	802
YA. S. OPMAN: The influence of the initial material moisture content upon the parameters in a dryer	808
A. A. FILYUKOV: Compatibility property of stationary systems	814
N. A. FRIDLENDER: Electric simulation of boundary conditions in unsteady-state heat and mass transfer problems	820
M. D. MIKHAILOV: Generalized finite integral transformation	826
R. A. IVANOV: Transient temperature fields in a channel with heat transfer fluid	832
A. G. GORELIK: Thermal conductivity of a hollow cylinder with the boundary condition of the fourth kind on the external surface	840
B. A. SOLOVIEV: Profile of a radiating disc of the smallest weight	845
I. S. LYUBCHENKO: To the theory of the flame thermal distribution in a condensed medium	849
V. M. DUBNER and N. V. KOMAROVSKAYA: Influence of nonelastic collisions upon transfer phenomena in hot gases	857
A. V. ROKHLENKO and V. A. LAVRENKO: Heat balance equation of a thermocouple sample in an isotropic medium	865
S. I. MANTULENKO and V. V. Kharitonov: Combined determination of thermal properties of pulverised materials	873
S. S. ZABRODSKII, N. V. ANTONISHIN and V. S. NIKITIN: On the effective thermal conductivity of disperse layers at higher temperatures	877
N. B. VARGAFTIK, L. S. ZAITSEVA and L. V. YANUSH: Experimental study of thermal conductivity of toluene, diphenyl and tetrachlorinated carbon vapours	882
V. E. KUKONIN: A photoelectronic attachment for measuring plasma temperature	890
V. P. MARDANENKO, B. F. ANISIMOV, V. G. EMELIANCHENKO and V. G. BENKOVSKII: Stability and dispersions of conducting droplets in a dielectric medium of a uniform electric field	895
YU. L. LEVKOVSKII and V. P. IL'IN: Influence of surface tension and viscosity of fluid upon closing of the cavitation cave	903
V. G. GOMAN: Distribution of the fan turbulent jet along a plane and concave solid surfaces	909
<i>Shorter Communications</i>	
A. GABRILLANTS: Application of engraver nomogram for approximate calculation of temperature of heat-insulated cylindrical wall	915
E. M. KHASAKHPASHEVA, YU. S. CHIRKOV and YU. V. KOSTYLEV: Thermal conductivity of non-Newtonian fluids versus displacement velocity	918
V. M. DEMENTIEV and YU. P. NEKHLEBAEV: Starting of three-zonal furnace for limestone roasting in a fluidized bed	921
N. L. KAFENGAUZ and M. I. FEDOROV: Conditions for the onset of fluidization in heat transfer with turbulent fluid flow	923
YU. I. BAKALIN, M. I. VERBA and V. D. PORTNOV: Thermal conductivity of gas mixtures reacting at a finite rate	925

### Reader's Guide

Contents List of the <i>International Journal of Heat and Mass Transfer</i> Vol. 11, No. 1 (1968)	927
Heat and Mass Transfer Bibliography	929

**JOURNAL OF ENGINEERING PHYSICS**

(Published in the U.S.S.R. in Russian with English abstracts)

*Volume XIV, No. 6**June, 1968*

<i>Page</i>	
A. V. LUIKOV, Z. P. SHUL'MAN and B. I. PURIS: External convective mass transfer from a plate in non-Newtonian fluid	961
T. A. KOLACH, R. KH. SHARIPOV and V. V. YAGOV: Heat transfer study of boiling of water when water is supplied to the heating surface by a capillary-porous body at low pressures	975
A. S. GINZBURG and K. B. GISINA: The analysis of vapour migration in capillary-porous bodies in sublimation in vacuum	983
G. A. KASPARYAN and G. S. KIRKEVICH: Intensification of thermal treatment of colloidal capillary-porous bodies	989
YU. P. ENYAKIN: Determination of the penetration depth of solid or liquid phase particles in impinging jets of gas suspension	995
G. P. YASNIKOV and L. G. GALPERIN: Losses of working capacity in gas-solid particle system due to the irreversibility of the interphase heat transfer	1001
K. E. DZHAUGASHTIN: Jet distribution along a porous wall	1006
T. F. RODIONOVA, V. G. RYKOV and I. M. TOLMACH: On the application of the electric modelling method for the calculation of cooling burdened magnetopipes	1010
S. A. MEREKALOV and YU. K. BULAVIN: Determination of the optical coefficients of fibrous thin-layer materials	1014
YU. A. SURINOV and S. V. KHOROL'SKII: The study of local and average angular radiation coefficients for a couple of concentric cylinders of finite length	1018
V. V. SHIRSHOVA: Coefficients characterizing sensibility of the posistor resistance to the change in heat transfer conditions	1025
YU. K. BRATUKHIN and L. N. MAURIN: Solution for a heated body in contact with a free fluid surface	1033
O. N. SUETIN, O. T. IL'CHENKO and V. E. PROKOFIEV: Solution of transient heat conduction problems with time variable boundary conditions of the third kind on electric models	1038
YU. V. VIDIN: Transient heat conduction in a laminated medium	1048
L. N. POLYANIN: Temperature field of two-dimensional axisymmetric regions	1056
E. F. OZEROVA and L. M. SIMUNI: Non-isothermy effect on separation in a viscous incompressible boundary layer	1060
V. B. BALAKIN: Division of variable-mass layer with gradual energy generation	1065
V. F. PRISNYAKOV: Empting of a pipe with fluid changing its aggregate state	1070
E. G. VORONTSOV: Minimum watering density of vertical film installations	1075
R. A. BERENTSVEIG and V. V. SHEVCHENKO: Measurement of asbestos-cement moisture content by the method of super-high frequency raying	1079
F. N. DRESVYANNIKOV: Study of thermal conductivity of the system $N_2O_4 \rightleftharpoons 2NO_2 \rightleftharpoons 2NO + O_2$	1086
<i>Shorter Communications</i>	
G. V. NOZDRENKO: Approximate estimation of heat transfer to freons of super-critical parameters	1091
T. F. BEKMURATOV: On efficiency of gas screen in a circular tube with an adiabatic wall	1096
<i>Survey</i>	
I. A. GUSEV and A. F. CHUDNOVSKII: Thermal conductivity of semiconductors irradiated with fast neutrons in low temperature range	1106
<i>Reader's Guide</i>	
Heat and Mass Transfer Bibliography	1117
Contents of the <i>Journal of Engineering Physics</i> , Vol. 14 (1968)	1134

**JOURNAL OF ENGINEERING PHYSICS**

(Published in the U.S.S.R. in Russian with English abstracts)

**Volume XV, No. 1****July, 1968***Page*

A. I. LEONTIEV, B. P. MIRONOV and V. A. MUKHIN: Effect of boundary conditions upon the law of turbulent boundary layer heat transfer	5
M. M. IVASHCHENKO and V. M. LYAPUNOV: On the simultaneous solution of temperature distribution problems in the rotor and stator of a gas turbine	12
S. K. ASLANOV: Stability of burning of disperse fuel in an engine chamber	21
A. M. FEINZIL'BER and N. A. FRIDLENDER: Electric modelling of energy and mass transfer problems	28
G. V. UL'FSKII: Factors effecting the value of the heat transfer agent heating in water-cooled reactors under pressure	35
S. P. GORBACHEV: Heat transfer in the nozzle of a vessel for keeping cryogenic fluids	40
G. P. NIKOLAEV and V. P. SKRIPOV: Generalization of experimental data on boiling crisis on immersed surfaces with the use of the thermodynamic similarity theory	46
V. F. STEPANCHUK: The number of condensation centres	52
A. YA. SHINYAEV and YU. E. UGASTE: The methods of D calculation in diffusion from vapour phase	60
L. M. BELYI, Z. R. GORBIS and I. K. SHUMAKOV: Study of the solid component distribution in the chamber of a dragged gas suspension counter-flow by beta-rays	66
M. KH. SOSNA and N. B. KONDUKOV: Criteria and formulae for calculating the rate of fluidization, Polydisperse layer	73
E. F. KURGAEV: Viscosity of a heterogeneous system fluid-solid particles	79
I. I. KIRILLOV, I. P. FADDEEV, V. N. AMELYUSHKIN and A. L. SHUBENKO: Braking of moisture films on the edges of the nozzle blades of vapour turbines	85
B. A. BALANIN: Supersonic jet outflow into channels of various shapes	91
V. E. GUBIN and V. S. LEVIN: Fluid flow at the starting length of a circular tube	98
L. A. KOZDOBA, V. I. MAKHNENKO: On the calculation of the "critical thickness" of plates with local surface heating	103
M. I. VERBA and V. N. VORGACHEV: On the effect of the homogeneous chemical reaction rate upon temperature and concentration distribution in the near-wall region of a circular tube with a turbulent gas flow	107
O. F. SHLENSKII and M. A. SHERYSHEV: Calculation of non-stationary temperature stresses in a plate of visco-elastic material the properties of which do not obey the principle of time-temperature similarity	113
V. I. MAKHNENKO, V. F. DEMCHENKO and D. A. KOZLITIN: An application of electronic digital computers for the study of ingot crystallization in refined remelting	124
I. T. EFIMOVA: Some problems of heat conduction theory for a bilayer medium	129
I. POP: Similarity solutions of boundary layer equations in the presence of a magnetic field	134
I. A. CHEREPENNIKOV and V. B. KOROBOV: An application of the similarity theory to the definition of fluid viscosity from molecular data	139
A. V. BULYGA and V. V. KHARITONOV: On the determination of temperature in two-dimensional heat conduction problems	146
V. N. KHARCHENKO: Heat transfer inside a porous material under steady-state conditions	149
A. I. ZHIDOVICH: Generalization of the voltage-current characteristics of electric-arc heaters of unilateral outflow with charge stabilization by various gases	153
M. YA. ROZKIN, N. A. MARTYNENKO, A. S. ZAKHAROV and M. I. BUT: The determination of the heat transfer coefficients with the help of dynamic characteristics	159
A. Z. VOLYNETZ: On the approximation in the substitution of the real temperature field by a stationary one in sublimation process	162
O. I. YASKO: Criteria for the correlation of the characteristics of different electric arcs	165

*Chronicle*

Symposium on Rheology of Polymers	170
-----------------------------------	-----

*Reader's Guide*

Contents list of the <i>International Journal of Heat and Mass Transfer</i> , Vol. 11, Nos. 2, 3 (1968)	171
---	-----

**JOURNAL OF ENGINEERING PHYSICS**

(Published in the U.S.S.R. in Russian with English abstracts)

*Volume XV, No. 2**August, 1968**Page*

V. I. VISHNYAKOV, A. M. MAKAROV, L. K. MARTINSON and K. B. PAVLOV: Interferometric study of heat transfer in turbulent jet flows	193
A. I. ZHIDOVICH, S. K. KRAVCHENKO and O. I. YAS'KO: Plasma generator with bilateral outflow and electrodes of variable diameter	203
R. A. PAVLOVSKII: Approximate solution of one steady-state problem with the conditions of convective heat transfer	207
P. M. KOLESNIKOV: Reduction of equations of nonlinear unsteady-state high-intensive heat and mass transfer to an equivalent linear equations. Analogies of high-intensive heat and mass transfer	214
B. R. BELOSTOTSII: Thermal regime of continuous solid optical quantum generators	219
V. A. MEN'SHCHIKOV and M. E. AEROV: Measurement of local gas content in a bubbling bed	228
N. KH. ZINNATULLIN, K. D. VACHAGIN and N. V. TYABIN: Two-dimensional flow of non-Newtonian fluid over an open surface of fast rotating flat disc	234
YU. L. LEVKOVSKII and G. G. SUDAKOVA: The effect of a solid wall on the closing of a spheric cavitation cavity	241
P. A. NOVIKOV: Study of convective heat and mass transfer in sublimation of a rotating sphere in rarefied air	248
N. E. GOROBTSOVA: A new method of determination of moisture diffusion coefficients in moist materials	253
V. N. KOCHERGIN and O. A. BALYSHEV: Formation of moisture and temperature fields in the process of heat and mass transfer of hydrothermal solutions and rocks	260
G. V. VORONOV, YU. V. VIDIN, E. A. KONDRAIEV and G. P. BOIKOV: Laws of heat distribution in the bodies of finite sizes and their application to radiation heating	268
S. G. IL'YASOV and V. V. KRASNICKOV: Distribution of radiation in capillary-porous bodies	272
YU. N. ANDREEV: On an approximate solution of the problem of steel heating with minimum decarbonization	280
A. M. ZAVADOVSKII and A. L. BERKOVICH: Determination of the flow parameters in water injection into compressed air	286
YU. A. POPOV: Study of an isothermal sphere with dissipation	293
S. K. ASLANOV: One-dimensional stability of normal burning of gases	298
A. I. BUTUZOV, S. N. FAINZIL'BERG, M. K. BEZRODNYI, P. P. KUDELYA, N. I. STOGNII and V. I. USENKO: An experimental study of heat transfer in Freon-12 boiling in the region of action of centrifugal forces	302
M. A. KAGANOV: On the optimum construction of semi-conductor coolers of liquid flows	309
V. A. KALASHNIKOV, YA. F. RUTNER and B. F. TRAKHTENBERG: Unsteady contact heat conduction problem in combined cylindrical systems with thermal resistance	315
V. S. NESHPOV: Thermal conductivity of cilicides of metals	321
L. I. URBANOVICH: Heat transfer in laminar incompressible liquid flow in an annulus with asymmetric boundary conditions of the second kind relative to the axis	326
I. I. VISHNEVSKII and V. N. SKRIPAK: Thermal conductivity of semi-crystalline corundum within the range of 90 to 1100°K	329
A. A. ANTANOVICH, G. YA. SAVEL'EV and M. A. PLOTNIKOV: Calculation methods of the thermodynamic properties at a pressure up to 12 kbar and the temperature higher than 700°K	335
M. S. TRAKHTENGERTS: Optimum relationships in a plane multilayer wall with inner heat generation	341
V. I. DERGACHEV and D. P. LEBEDEV: Automatic balance for measurements in vacuum	346
<i>Book Review</i>	
G. N. DUL'NEV, A. A. MEN' and O. A. SERGEEV: Review of <i>Theoretical Fundamentals of Measuring Unsteady Temperatures</i> by N. A. YARYSHEV	351
<i>Reader's Guide</i>	
Heat and Mass Transfer Bibliography	353

**JOURNAL OF ENGINEERING PHYSICS**

(Published in the U.S.S.R. in Russian with English abstracts)

*Volume XV, No. 3**September, 1968*

	Page
A. A. STOLYAROV and N. V. KONDUKOV: Density in adiabatic flow of evaporating liquids	385
A. I. ZHIDOVICH, S. K. KRAVCHENKO and O. I. YAS'KO: Heat transfer between an electric arc column and a wall of the discharge chamber of a vortex linear plasma generator	392
V. T. KUMSKOV and YU. P. SIDOROV: Combined heat transfer under the conditions of free convection	400
G. A. DREITSER and E. K. KALININ: The study of heat transfer intensification in a packed tube bundle in an air flow	408
L. S. ATROSHCHENKO and S. M. VORONINA: Hydrodynamics of processes in bubbling reactors with external potential fields	416
S. P. DETKOV: Radiation in a non-gray gas layer between gray walls	422
A. V. BULYGA: The effect of the surface curvature in the process of transfer through a rarefied gas	427
M. P. ANISIMOVA and E. V. STEKOL'SHCHIKOV: Energy losses in a two-phase flow due to the mechanical interaction of phases	436
Yu. A. DUSHIN, V. A. DYUMIN and G. A. LUK'YANOV: Velocity of disassembling including depolymerization	444
V. E. MASLOV, V. D. LEBEDEV and S. G. USHAKOV: The effect of the initial velocity of aerosol on its motion path in a curvilinear gas flow	450
N. L. KAFENGAUZ and M. I. FEDOROV: Interconnection between the temperature of the surface in cooling and the frequency of the self-oscillations of pressure in heat transfer to a turbulent liquid flow	455
M. A. KAGANOV and A. S. RIVKIN: Unsteady-state regime in heat exchangers with an internal heat source	459
M. V. KRAVTSOV: Resistance to a free developed motion of a sphere in a viscous medium	464
V. V. SAPOZHNIKOV and N. I. SYROMYATNIKOV: Study of through flows of the type "gas-solid particles" as heat transfer agents	471
G. N. CHERMALYKH and K. E. MAKHORIN: Radiation heating of a boiling bed	477
L. G. KALININ and Z. R. GORBIS: Study of the heat transfer of a rotating sphere under the conditions of natural convection by the schlieren method	481
V. G. D'YAKOV and A. G. USMANOV: Study of the effect of high-frequency electromagnetic field upon the heat transfer in boiling	484
V. I. GUBINSKII: Electric simulation of metal heating with scale formation	488
A. S. LYALIKOV and L. S. KONOVALOVA: The temperature field of a short tube with internal heat sources	494
P. M. KOLESNIKOV: Simple and shock waves in non-linear high-intensive unsteady-state heat and mass transfer	501
M. G. KAGANER: The solution of the problem of monotonic heating of a plate by various methods	505
P. M. KESSEL'MAN and V. R. KAMENETSKII: A generalized equation for the calculation of viscosity of inert gases at high pressures	514
Yu. A. GANIEV and YU. L. RASTORGUEV: Thermal conductivity of organic liquids	519

*Shorter Communications*

R. S. MIKHAILOV, A. G. GERZHIN, V. T. ARKHIPOV and N. P. PERSHIN: The dependence of the effective thermal conductivity of multilayer insulation upon its thickness	526
V. A. SHIRSHOVA and V. K. SERIKOV: Determination of heat capacity of positors	529
A. K. TSOKUR: The study of temperature distribution inside a moving band heat source	534
Yu. G. ZHULEV and N. A. KOSARENKO: Theoretical study of a laminar film condensation of saturated vapour moving along an isothermal surface	537
E. G. VORONTSOV: Some peculiarities of temperature distribution along the cross-section of a watering film	570

*Survey*

O. I. YAS'KO: Problems in the generalization of electric arc properties	543
---	-----

*Reader's Guide*

Contents list of the <i>International Journal of Heat and Mass Transfer</i> , Vol. 11, No. 4 (1968)	564
---	-----