

SOV/96-58-11-2/21

AUTHOR: Ivanov, Ya.V., Candidate of Technical Science

TITLE: The Design of Combined Pulverised-Fuel/Gas Burners with Central and Peripheral Gas Delivery (Rascheti kombinirovannykh pylegazovykh gorelok s tsentral'noy i periferiynoy podachey gaza)

PERIODICAL: Teploenergetika 1958, Nr 11, pp 9-13 (USSR)

ABSTRACT: Combustion has not always been complete when burning gas fuel. This is partly because there is no established procedure for designing burners for use with forced draught and the construction of the burners is not always based on knowledge of the complicated processes of interaction between a flow of gas and a flow of air. No method exists for selecting the best values of initial gas velocity, diameter and pitch of holes, angles of attack of jets relative to direction of air flow and so on. The design of burners of the jet-mixing type consists in calculating the behaviour of a number of jets with a cross-flow of air. This subject has been studied in relation to other technical problems in previous work published by this author. There the several

Card 1/4

SOV/96-53-11-2/21

The Design of Combined Pulverised-Fuel/Gas Burners with Central and Peripheral Gas Delivery

variables that govern the process of jet development in a cross-flow were reduced to two governing parameters. One of these, the hydro-dynamic parameter, depends on gas and air-flow conditions; the other depends on burner design factors. A simple diagram of a gas jet in a cross-flow of air that is used as a basis for mathematical analysis is given in Fig.1. The concept of relative depth of penetration of the jet into the cross-flow is defined and a formula for its evaluation is given. Empirical coefficients that enter into the formula may be read from the graph of Fig.2. Inadequate mixing of gas and air is one cause of incomplete combustion. It is necessary to obtain uniform distribution of gas in air for good combustion; the formulae given in the article are used to make calculations of this case. The design of a combined pulverised-fuel/gas burner with central gas delivery, as illustrated in Fig.3, is

Card 2/4

SOV/95-53-11-2/21

The Design of Combined Pulverised-Fuel/Gas Burners with Central and Peripheral Gas Delivery

first considered. On test, this burner was found to operate unsatisfactorily. Test results are given. A calculation is made which shows that the gas jets penetrate the air flow to a depth of not more than 30 mm, so that there is delay in the mixing of gas and air causing a long flame and poor combustion. Calculations are then made to show how the design may be improved. The dimensions of the various parts of the burner are calculated. The new burner gave a short flame and good combustion. A combined pulverised-fuel/gas burner with peripheral gas delivery is illustrated in Fig.4. This burner also gave incomplete combustion; test results are presented. Re-design of the burner is considered. Diagrams illustrating the distribution of the gas jets in the air flow with central and with peripheral gas delivery are given in Fig.5. In the first case, large holes are located as near as possible to the outside edge of the burner and small holes near the centre. In the second case, the relative positions are

Card 3/4

SOV/96-58-11-2/21

The Design of Combined Pulverised-Fuel/Gas Burners with Central and Peripheral Gas Delivery

reversed. The design principles given in this article may be used to check the mixing conditions in burners of both types and to indicate design improvements. The problem of the degree of mixing of gas that must be achieved in the burner throat can be solved by practical trials on burners designed by the recommended procedure. There are 5 figures and 6 literature references all of which are Soviet.

ASSOCIATION: Institut energetiki AN Estonskoy SSR  
(Institute of Power Engineering of the Academy of Sciences, Estonian SSR)

Card 4/4

IVANOV, Yuriy Vasil'yevich (Institute of <sup>Power Engineering</sup> ~~Energy~~ of the Acad Sci  
 USSR) for Doc of Technical Sci on the basis of dissertation defended  
 25 May 59 in Council of <sup>Power Engineering</sup> ~~the Energetics~~ Institute im. Krzhizhanovskiy,  
 Acad Sci USSR, entitled: "<sup>Study</sup> Investigation of Jetting <sup>streams</sup> ~~Currents~~ in Free  
 and <sup>Restricted Currents</sup> ~~in Dammed Streams~~." (BIVISSO USSR, 2-61, 30)

240

SOV/23--59--2-2/8

AUTHORS: Sui, H., and Ivanov, Yu.V., Candidate of Technical Sciences

TITLE: The Study of the Development of a Round Jet in the Initial Range of a Transverse Stream of a Larger Dimension

PERIODICAL: Izvestiya Akademii nauk Estonskoy SSR, Seriya tekhnicheskikh i fiziko-matematicheskikh nauk, 1959, Nr 2, PP 78-83 and insert(USSR)

ABSTRACT: The article deals with the development of a round jet in a transverse stream. The results of experiments prove that, in a transverse stream (D=700 mm), the extinction of the axial velocity of round jets of different diameters ( $d=5 + 20$  mm) with the same speed value does not generalize in a single curve (Figure 2) as is the case in a stationary environment and with a co-stream. The velocity ranges of the round jet in different sections are similar

Card 1/2

SOV/23-59-2-2/8

The Study of the Development of a Round Jet in the Initial Range  
of a Transverse Stream of a Larger Dimension

(Figure 5), and they may be expressed by a formula  
(2). There are 5 graphs, 1 diagram, and 2 Soviet  
references.

Card 2/2

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S/023/60/000/004/003/005  
D221/D305

26.3170

AUTHORS: Suy, Kh., and Ivanov, Yu.V., Doctor of Technical Sciences

TITLE: On the question of a jet flow in a mixed stream

PERIODICAL: Akademiya nauk Estonskoy SSR, Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 4, 1960, 331-337

TEXT: In their previous work Yu.V. Ivanov and Kh.N. Suy (Ref. 1: Issledovaniye razvitiya strui v sputnom potoke (Research on the Development of a Jet Flow in a Mixed Stream), Izv. AN ESSR, Seriya Tekhn. i Fiz.-Mat., nauk, vol. VII, No. 2, 1958) and (Ref. 2: Issledovaniye razvitiya krugloy strui v nachalnom uchastke vstrechnoy strui bolshogo razmera (Research into the Development of a Cylindrical Jet in the Initial Sector of a Head-On Large Dimensional Jet), Izv. AN ESSR, Seriya Tekhn. i Fiz.-Mat. nauk, vol. VIII, No. 2, 1959), established the basic laws of extinction of the axial velocity of turbulent cylindrical and flat jets developing in a

Card 1/6

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On the question of a jet ...

co-stream. Since in experiments with jets in co-streams it is impossible to obtain a constant profile of the main jet velocities along the whole of the jet cross-section, it has been thought useful, both from theoretical and practical points of view, to establish experimentally the relationship between the velocity profile in the vicinity of the nozzle and the laws governing the decay of the axial velocity of co-streams and the present article presents the results of this experiment. Velocities of the jet near the orifice were being changed artificially. It was determined that the basic parameter for isothermal streams is the parameter  $\lambda = v_2/v_1$ , where  $v_2$  is the axial velocity of the stream at the orifice and  $v_1$  is the average velocity of the co-stream. The experiments were carried out for streams of various dimensions. The ratios of the stream diameter  $D_s$  to the diameter of the nozzle orifice  $d$  or to the smaller dimension of a flat nozzle  $2b_0$  have been

X

Card 2/16

21313

S/023/60/000/004/003/005  
D221/D305

On the question of a jet ...

taken for cylindrical nozzles from 22 to 70 and for flat nozzles from 250 to 580 respectively. The results are given as graphs in Fig. 1 and Table 1. Next the experimental data for the jet in a co-stream were analysed. Fig. 2 shows the radial distribution of velocities at the cross-sections of the jet and of the stream for  $\lambda = 13.1$ . This shows that the jet flow in a co-stream can be observed at a distance up to 30 times the diameter of the nozzle and that it is characterized on every curve by a transition point, in the vicinity of which the velocity becomes commensurable with the mean stream velocity. Fig. 3 has been drawn from the results of measuring the velocity fields at various cross-sections of the main part of the jet in a co-stream. It is seen that experimental points form smooth curves within the investigated section. The same curves are redrawn in relative co-ordinates in Fig. 4 as graphs of function (1)

$$\frac{\Delta v}{\Delta v_m} = f\left(\frac{z}{z_{av}}\right) \quad (1)$$

Card 3/16

21313  
S/023/60/000/004/003/005  
D221/D305

J

On the question of a jet ...

where  $\Delta v = v - v_1$  - the excess radial velocity of the jet with respect to the co-stream velocity at a given point of any cross-section;  $\Delta v_m$  - the excess axial velocity at any cross-section of the jet;  $z$  - distance from the axis to the given point and  $z_{av}$  distance from the axis to the point for which  $\Delta v / \Delta v_m = 0.5$ . The solid line on this graph represents the theoretical profile of the jet in a co-stream, corresponding to the law for velocity profile in the border zone of a jet

$$f(\eta) = (1 - \eta^{3/2})^2. \quad (2)$$

First met in the work of H. Schlichting (Ref. 3: Ueber das ebene Windschatten-problem, Ing. - Arch. No. 5, 1930). According to G.N. Abramovich (Ref. 4: Teoriya turbulentnykh struy, Fizmatgiz, M. 1960) this law can be applied to facilitate further determination of the velocity profile of the jet in a co-stream; after transfor-

Card 4/16

21313

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D221/D305

On the question of a jet ...

mations

$$\frac{\Delta v}{\Delta v_m} = \left[ 1 - \left( \frac{z}{b} \right)^{3/2} \right]^2 \quad (3)$$

is obtained, where  $z$  - distance from the jet axis;  $b$  - half width of an arbitrary cross-section of the main region of the jet. Fig. 4 shows good agreement between the experiment and the theoretical profile for the whole region except for the region  $z/z_{AV}$  from 0 to 0.5, within the curve of the velocity profile of the jet, drawn from experimentally obtained data, lies somewhat above the theoretical one. Since experiments were carried out with jets of various diameters in co-streams having various velocity profiles at the nozzle, it was of interest to establish the influence of the above conditions in the decay of axial velocities of jet flows. The results are presented graphically in Fig. 5, in which the decays of jet velocity of various diameters are compared for two values of

Card 5/16

21313  
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D221/D305

J

On the question of a jet ....

$\lambda$  (5.08 and 13.1). As in all other cases, experimental and theoretical points are in good agreement. It follows that the usually observed irregularities in the velocity profiles of the co-stream at the orifice of the nozzle do not substantially interfere with the mechanism of development of the jet with basic section. It also shows that irregularities in the velocity profiles near the wall of the nozzle orifice do not influence the law of decay of axial velocity, and the similar development of velocity fields at various jet cross-sections and do not influence the boundaries of the jet flow. It is stated in conclusion that the monograms and formulae given by the authors in their previous works (Refs. 1 and 2: Op.cit.) for determining the decay of the axial velocity of the jet flow in a co-stream are, therefore, of a general character. There are 6 figures, 1 table and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut energetiki, akademii nauk Estonskoy, SSR  
(Academy of Sciences of the Estonian SSR, Institute of Energetics)

SUBMITTED: June 1, 1960  
Card 6/16

IVANOV, Yuriy Vasil'yevich, doktor tekhn. nauk; LYAKHOVER, Lidiya Moiseyevna, inzh.; SLOUSHCHER, Kal'man Mironovich, inzh.; SHATSILLO, O.I., inzh., red.; FOMICHEV, A.G., red. izd-va; GVIRTS, V.L., tekhn. red.

[Experiment in the change-over to gas of the boiler units of industrial enterprises and electric power plants; from practices of the gazification of Leningrad industries] Opyt perevoda na gaz kotloagregatov promyshlennykh predpriatii i elektrostantsii; iz opyta gazifikatsii leningradskoi promyshlennosti. Leningrad, 1961. 31 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriya: Energetika, no.7) (MIRA 14:9)

(Gas burners)

(Boilers)

IVANOV, Yu.V.

Elevation above the mouth attained by a stream of gases issuing  
from a point or linear source into a transverse air flow. Inzh.-  
fiz. zhur. 4 no.4:113-115 Ap '61. (MIRA 14:5)

1. Institut energetiki AN ESSR, g. Tallin.  
(Aerodynamics)

IVANOV, Yu.V.

Effective utilization of gaseous fuel in boilers. Trudy IGI 16:  
388-411 '61. (MIRA 16:7)

(Boilers) (Gas as fuel)



S/119/62/000/001/011/011  
D201/D302AUTHOR: Ivanov, Yu.V.

TITLE: A generator for testing dosimetry apparatus

PERIODICAL: Priborostroyeniye, no. 1, 1962, 30

TEXT: The author describes a generator for testing and adjustment of dosimetry instruments (Fig. 1). An MH-8 (MN-8) neon tube relaxation oscillator, its frequency determined by the time constant RC, feeds a transistor single-shot multi-vibrator (transistors T<sub>1</sub> and T<sub>2</sub>) producing single pulses for every firing of the neon. After the pulse shaping network - negative pulses are obtained which by proper choice of the circuit components, may easily be made similar to pulses from any radiation counter. The ДГ-118 (DG-Ts8) crystal diode suppresses the positive pulse residues left after the pulse forming circuit. The power supply rectifier bridge has ДГ-11-27 (DG-Ts-27) diodes. The mains transformer has a 24 mm thick core of Ш-16 (Sh-16) laminations. Diode D<sub>2</sub> is also of the type DG-Ts-27. ~~There is 1 figure.~~

Card 1/1

S/023/62/000/002/001/002  
D234/D30824.4300  
AUTHORS:Sui, H., and Ivanov, Yu.V., Doctor of Technical  
Sciences

TITLE:

A system of round turbulent jets in concomitant flow

PERIODICAL:

Akademiya nauk Estonskoy SSR. Izvestiya. Seriya fiziko-  
matematicheskikh i tekhnicheskikh nauk, no. 2, 1962,  
83 - 89

TEXT: The purpose of the investigation was to find the effect of relative distances  $s/d$  between parallel turbulent isothermic air jets on the development of a jet in a concomitant flow of the same medium. The experimental installation is described. Two different velocity fields were tested, the ratios of the velocities of jets and flow  $\lambda$  being 2, 3, 5, 7, 10 and  $\infty$ . 9 nozzles were used. The results are given in graphs. It is concluded that 1) the attenuation of the axial velocity of jets depends on both  $\lambda$  and  $s/d$ ; a system of jets is attenuated more slowly than a single jet; the influence of  $s/d$  decreases rapidly and practically disappears for  $s/d$  larger than 8. 2) The influence of  $s/d$  begins at a distance from the nozzle

Card 1/2

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S/023/62/011/003/002/002  
D237/D308

26.0173  
10.1500  
AUTHORS:

Timma, E. and Ivanov, Yu., Doctor of Technical Sciences

TITLE:

Jets of round and rectangular cross-section in a co-stream

PERIODICAL:

Akademiya nauk Estonskoy SSR. Izvestiya, v. 11, no. 3, 1962, 178-190

TEXT:

This is a continuation of the work done earlier at the Institute of Power Engineering of the Estonian SSR. Initial and transition sectors of round and rectangular turbulent jets were investigated, and component velocities and temperatures at various parametric velocity and temperature values were obtained across the jets, at varying distances from the nozzle. The experimental installation is described in detail. The ratio of absolute temperatures of the stream and the jet  $\theta = T_j/T_s$  and that of stream velocity and maximum jet velocity  $\mu = u_s/u_j$  were:  $\theta \approx 1$ ;  $\mu = 0$ ; 0.2; 0.333 and  $\theta \approx 1.5$ ;  $\mu = 0$ ; 0.3 for plane jets,  $\mu = 0$ ; 0.1; 0.15; 0.16;

Card 1/2

IVANOV, Yuriy Vasil'yevich, doktor tekhn. nauk; MIKHAYLOV, Z.V., red.;  
GOR'KOVA, A.A., ved. red.; VCRONOVA, V.V., tekhn. red.

[Fundamentals of the calculation and design of gas burners]  
Osnovy rascheta i proektirovaniia gazovykh gorelok. Moskva,  
Gostoptekhizdat, 1963. 359 p. (MIRA 16:4)  
(Gas burners)

2c  
L 22493-65 AFWL/AEDG(a)/ASD(f)-3/AFMDC  
ACCESSION NR: AP5002420

S/0286/6A/000/024/002A/002A

AUTHORS: Dobrovolskiy, V. L.; Kaspruk, Yu. V.; Ryabov, B. I.; Sharov, Yu. N.; Mikhaylina, S. N.; Ivanov, Yu. V.; Budrik, G. V. 7  
B

TITLE: A method of raising and holding a cassette, with a source of ionizing radiation, in a vertical pipe in a suspended state. Class 21, No. 166975

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1964, 24

TOPIC TAGS: dynamic pressure, liquid flow, gas-flow

ABSTRACT: This Author Certificate presents a method of applying the dynamic pressure of a liquid or gas current to raise and hold a cassette, with a source of ionizing radiation, in a vertical pipe in a suspended state.

ASSOCIATION: none

SUBMITTED: 28Nov62

ENGL: 00

SUB CODE: ME

NO REF SOV: 000

OTHER: 000

Card 1/1

IVANOV, Yu.V.

Better use of constructive ideas. Leg.prom. 16 no.12:17-18 D '56.  
(Shoe industry) (MLRA. 10:2)

IVANOV, Yu.V., inzh.

~~XXXXXXXXXX~~  
New equipment for dyeing skins by coating. Leg. prom. 18 no.1:3 of  
cover Ja '58. (MIRA 11:2)

(Dyes and dyeing--Leather)

TIMOKHIN, N.A.; IVANOV, Yu.V.

Drying and moisturing units used in the leather industry. *Biul.tekh.-  
ekon.inform.* no.5:46-47 '58. (MIRA 11:7)  
(Leather industry--Equipment and supplies)



IVANOV, Yu. V. inzh.

Hydraulic equipment used in leather machinery. Reg. proc. 18  
no.8:50-51 Ag '58. (MIRA 11:9)  
(Leather--Machinery)

IVANOV, Yu. V. inzh.

New tanning machinery. Leg.prom. 18 no,10:55-56 0 '58.  
(Tanning--Equipment and supplies) (MIRA 11:11)

IVANOV, Yu.V., inzh.

New shoe machinery. Leg.prom. 18 no.11:55-3 of cover N '58.  
(MIRA 11:12)

(Shoe machinery)

IVANOV, Yu.V., inzh.

New leather machinery. Kozh.-obuv.prom. no.1:39-40 Ja '59.  
(MIRA 12:6)

(United States--Leather--Machinery)

✓  
IVANOV, Yu., inzh.

Production of footwear. Kozh.-obuv.prom. no.2:34-36 F '59.  
(MIRA 12:6)

(Shoe manufacture)

IVANOV, Yu.V., inzh.

Through-type roller wringer press. Kozh.-obuv.prom. no.4:39-40  
Ap '59. (MIRA 12:7)

(Leather--Machinery)

IVANOV, Yu. V.

Basic trends in the development of drying methods abroad.  
Kozh.-obuv.prom. no.12:33-35 D '59. (MIRA 13:5)  
(Leather--Drying)

IVANOV, Yu.V., inzh.

New continuous glazing machines. Kozh.-obuv.prom. 2 no.4:35-36  
Ap '60. (MIRA 13:9)

(Leather--Machinery)



IVANOV, Yu.V., inzh.

Continuous roller machines for the leather industry. Kozh.-obuv.  
prom. 2 no.6:25-29 Je '60. (MIRA 13:9)  
(Leather industry--Equipment and supplies)

IVANOV, Yu.V., inzh.

Use continuous rollermachines in leather manufacturing. Kozh. ~  
obuv.prom. 2 no.7:34 J1 '60. (MIRA 13:8)  
(Leather--Machinery)

IVANOV, Yu.V.; SHPITAL'NIK, A.D.

Prospects of the manufacture of machinery for the leather industry.  
Kozh.-obuv.prom. 3 no.2:13-15 F '61. (MIRA 14:4)  
(Leather industry--Equipment and supplies)  
(Machinery industry)

IVANOV, Yu.V.; VINITSKIY, D.B.

New shaving machine. Kozh.--obuv.prom. 4 no.3:36-39 Mr '62.  
(MIRA 15:5)  
(Leather industry.--Equipment and supplies)

IVANOV, Yu.V.

Dryer with glass frames. Kozh.-obuv.prom. .4 no.11:39-41 N '62.  
(Czechoslovakia--Drying apparatus) (MIRA 19:11)

IVANOV, Yu.V.

Modern design of glazing and graining presses for leather manufacture.  
Kozh.-obuv.prom. 5 no.4:32-35 Ap '63. (MIRA 16:5)  
(Leather industry--Equipment and supplies)

IVANOV, Yu.V.

Continuous sole leather roller used in the "Svit" Factory (from  
"Kozarstvi," no.8, 1962). Kozh.-obuv.prom. 5 no.5:36-37 My '63.  
(Czechoslovakia--Leather--Machinery) (MIRA 16:5)

IVANOV, Yu.V.; VOL'NOVA, Z.G., nauchn. red.; ZORINA, G.V., red.

[Modern saming and scouring machines for leather production;  
foreign technology] Sovremennye otzhimnye i razvodnye mashiny  
kozhevennogo proizvodstva; zarubezhnaia tekhnika. Moskva,  
TSentr. in-t nauchno-tekhn. informatsii po avtomatizatsii i  
mashinostroeniiu TsBTI, 1963. 49 p. (Seria III: Nove ma-  
shiny, oborudovanie i sredstva avtomatizatsii) (MIRA 17:6)



ACC NR: AP6035746

(A)

SOURCE CODE: UR/0413/66/000/019/0109/0109

INVENTORS: Balandin, M. P.; Volosatov, A. K.; Antonenko, I. Ya.; Bushtets, P. P.;  
Zhirnov, A. I.; ~~Iyanov, Yu. V.~~; Kruglyakov, M. L.; Mordukhovich, A. I.; Popov, P.  
K.; Smetnov, S. D.; Fanfaroni, F. I.; Shcherbakov, A. M.; Krivoshey, M. N.

ORG: none

TITLE: A device for broadcasting pesticides and meliorating substances. Class 45,  
No. 166787 [announced by All-Union Scientific Research Institute for Mechanization of  
Agriculture (Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii sel'skogo  
khozyaystva)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 109

TOPIC TAGS: agricultural machinery, agricultural engineering, broadcasting operation,  
pesticide, fertilizer

ABSTRACT: This Author Certificate presents a device for broadcasting pesticides and  
meliorating substances. The device contains a tank divided into sections, broadcasting  
mechanisms, receiving chambers of the fertilizer duct, and a driving mechanism. To  
provide for a uniform broadcasting of a material, the broadcasting mechanisms are  
made in the shape of cones mounted on a common shaft carrying a spiral with the  
opposite direction of coil loops. Every revolving cone may be spring loaded and may

Card 1/2

UDC: 631.333.9

ACC NR: AP6035746

be contained, together with a receiving chamber, in a common casing.

SUB CODE: 02, <sup>09/</sup>~~12/~~ SUBM DATE: 23Apr65

Card 2/2

IVANOV, Yu.V.; TEMNIKOV, F.Ye.

Logical-information reliability systems. Priborostroenie no.6;  
18-22 Je '63. (MIRA 16:8)

(Electronic data processing)

IVANOV, Yuriy Viktorovich, kand. ekon. nauk, dots.; SHCHEDRIN,  
Nikolay Ivanovich, kand. ekon. nauk, dots.; ISAKOV, V.I.,  
doktor ekon. nauk, prof.; NOVIKOVA, S., red.; PYATAKOVA,  
N.D., tekhn. red.

[Organization of machine accounting] Organizatsiia mekhani-  
zirovannogo ucheta. Moskva, Gosstatizdat, 1963. 330 p.

(MIRA 16:12)

(Machine accounting)

IVANOV, Yuriy Viktorovich; VOLKOV, S.I., data, redaction  
LASHIN, A.N., redaction; KADANOV, N.I., red.

[Planning and accounting ing in machine accounting stations] Planirovaniye i uchot na mashinostroynykh ustanovkakh. Moskva, Statistika, 1964. 66 p. (RDP86 10011)

1. Direktor Fervoy moskovskoy fabriki n'vysokoinovennogo scheta (for Lashin).

IVANOV, Yu. V.

Detector of fast neutrons insensitive to  $\gamma$ -radiation. Nov. nauch.-issl.  
rab. po metr. VNIIM no.2:49-52 '64. (MIRA 18:4)

FETISOV, V.V. (Leningrad); KVARTAL'NOV, B.V. (Leningrad); IVANOV, Yu. Ya.  
(Leningrad); PINCHUK, V.M. (Leningrad); TIKHOMIROV, A.N.  
(Leningrad)

Generator-motor inverse d.c. to a.c. converter. Izv. AN SSSR.  
Utd. tekhn. nauk. Energ. i avtom. no.4132-39 J1-Ag '62.  
(MIRA 15:8)  
(Electric current converters)

FETISOV, V.V.; SIDEL'NIKOV, B.V.; IVANOV, Yu. Ya.

Study of the excitation system of a synchronous machine of a  
reversible generator-motor type converter. Trudy LPI no.241:  
33-40 '64. (MIRA 18:4)



"APPROVED FOR RELEASE: 08/10/2001

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CIA-RDP86-00513R000619210015-6"

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CIA-RDP86-00513R000619210015-6

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000619210015-6"

IL'IN, M.P., inzh.; IVANOV, Yu.Ye., inzh.

Using trench excavators in digging holes for contact system  
supports. Transp.stroi. 10 no.1:25-26 Ja '60.

(MIRA 13:6)

(Excavating machinery) (Electric lines--Poles)

MIRONOV, V.Ye.; KUL'BA, F.Ya.; IVANOV, Yu.Ye.

Complex compounds of zinc with alkali metal chlorides. Zhur.  
neorg. khim. 9 no.7:1633-1637 J1 '64. (MIRA 17:9)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta,  
kafedra obshchey khimii.

L 04443-67 EWT(d)/FSS-2/EWT(1)/ENP(m)/EEG(k)-2

ACC NR: AP6022060

SOURCE CODE: UR/0146/86/009/003/0089/0092

AUTHOR: Shumskiy, M. P.; Ivanov, Yu. Ye.

ORG: Tomsk Polytechnic Institute (Tomskiy politekhnicheskii institut)

66  
B

TITLE: Selection of gyromotor rotor shape to assure minimum aerodynamic drag

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 3, 1966, 89-92

TOPIC TAGS: gyroscope system, rotor, aerodynamic drag moment, pneumatic device

ABSTRACT: The problem of reducing the moment of aerodynamic drag is considered under the condition that the parameters determining accuracy be preserved. Hence the aerodynamically optimum rotor is sought from the set of rotors having a given moment of inertia and size. The problem of finding a function passing through two given points and yielding a minimum functional is solved making use of the Euler formula. On the basis of the derived formula, optimum profiles passing through one of the given points at a given angle may be plotted graphically. The problem of finding the optimum form of a uniform rotor is then solved in a similar manner and yields a first-order equation. The optimum form of transition from the cylindrical opening to the end face of the rotor, and the optimum form of the diaphragm of a pneumatic gyromotor are considered as examples. Three variations of refinement of aerodynamic properties of a rotor are shown graphically, one determined from the derived formulas, two formed by straight bevels at 45 and 15°. It is concluded that when it is important to reduce aero-

Card 1/2

UDC: 528.526.2

L 04443-57

ACC NR: AP6022060

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dynamic drag the straight bevel can be replaced by a rounded one of optimum form. Orig. art.  
has: 14 formulas and 2 figures.

SUB CODE: 17, 20/      SUBM DATE: 27Apr65/      ORIG REF: 003

Card 2/2 *egw*

HAIDOUTOV, I. [Khaidutov, I.]; IVANOV, Z.

Notes on structural and petrographic particularities of Stakevski pluton and its metamorphic mantle. Doklady BAN 14 no.4:377-380 '61.

1. Submitted by Academician E. Bonchev.

GOCHEV, P.M.; IVANOV, Zh.; KHAIDUTOV, Iv.

Structural peculiarities of the Mezdra pluton and its framework.  
Izv Geol inst BAN 12:5-76 '63.



IVANOV, Z. F.

USSR/ Miscellaneous

Card 1/1 : Pub. 61 - 18/23

Authors : Galkin, N. M., and Ivanov, Z. F.

Title : Machine for cutting skeleton wire

Periodical : Lit. proizv. 3, page 29, May-June 1954.

Abstract : A simple machine for rapid cutting of skeleton wire (production of rods and bars), is described. Drawing.

Institution : ...

Submitted : ...

*Иванов, З.В.*  
KEEMS, A.Ya.; ZDOROV, S.F.; IVANOV, Z.Y.

Dzhebol field in the Komi A.S.S.R. Geol. nefi 2 no.1:53-63 Ja '58.  
(Pechora Valley--Gas wells) (MIRA 11:1)

~~IVANOV-ALLILUYEV, Sergey Kuz'mich; IOPIS, Ye.A., kand.tekhn.nauk, red.;~~  
ZHERDETSKAYA, N.N., red.; CHICHERIN, A.N., tekhn.red.

[Landscape photography; practices of a master of landscape  
photography] Fotos"emka peizazha; iz opyta raboty mastera  
fotopeizazha. Izd. 2., ispr. i dop. Pod red. E.A. Iofisa.  
Moskva, Gos. izd-vo "Iskusstvo," 1958. 45 p. (Biblioteka  
fotoliubitelia, no.4) (MIRA 12:2)  
(Photography--Landscapes)

Dissertation: "An Account of the Influence of the Expanded Zone of Concrete in the Calculation of Bending Ferroconcrete Elements by Limiting States (of Strength and Endurance)." Cand Tech Sci, All-Union Sci Res Inst of Railroad Construction and Planning, Moscow, 1953. (Referativnyy Zhurnal--Mekhanika, Moscow, Apr 54)

SO: SUM 243, 19 Oct 1954

ASHRABOV, Abbas Babayevich, kandidat tekhnicheskikh nauk; ~~IWANOV-DEARLOV~~  
Andrey Ivanovich, kandidat tekhnicheskikh nauk; MURAKAYEVA, A.K.  
redaktor; RAKHMATYLLIN, F., tekhredaktor.

[Using precast reinforced concrete in construction work; based  
on conditions in Uzbekistan] Primenenie sbornogo zhelezobetona v  
stroitel'stve; v usloviakh Uzbekskoi SSR. Tashkent, Gos.izd-vo  
Uzbekskoi SSR, 1956. 51 p. (MIRA 10:6)  
(Precast concrete construction)

IVANOV-DYATLOV, A.I., kandidate tekhnicheskikh nauk.

Standardizing culverts used under embankments. Avt.dor. 19 no.9:  
22-24 S '56. (MLRA 9:11)

(Culverts)

IVANOV-DYATLOV, A.I., kandidat tekhnicheskikh nauk.

Prestressed reinforced concrete bridges with large spans. Avt. Dor.  
20 no.2:28-29 P '57. (MLBA 10:4)

(Bridges, Concrete)

BUDBERG, V.Yu., kand.tekhn.nauk; IVANOV-DYATLOV, A.I., kand.tekhn.nauk

New techniques in wire-reinforced concrete span construction. Avt.  
dor. 20 no.12:10-11 D '57. (MIRA 12:4)  
(Bridges, Concrete) (Reinforced concrete construction)



IVANOV-DYATLOV, A.I., kand. tekhn. nauk.

Studying strength of repeated loads in reinforced concrete elements.  
Bet. i zhel.-bet. no.9:353-356 S '58. (MIRA-11:10)  
(Girders--Testing)

IVANOV-DYATLOV, A.I., kand.tekhn.nauk; MOISEYENKO, V.I., inzh.

Limit strength of concrete made with expanded clay filler.  
Avt.dor. 21 no.6:9-11 Jo '58. (MIRA 12:10)  
(Lightweight concrete)

IVANOV-DYATLOV, A.I., kandid. tekhn. nauk

Experimental investigations in joining primary elements of  
reinforced concrete structures. Vop.tip.most.soor. no.4:14-25  
'59. (MIRA 13:8)

(Bridges, Concrete)

BUDBERG, V.Yu., kand.tekhn.nauk; IVANOV-DYATLOV, A.I., kand.tekhn.nauk

Railroad-bridge span structures built of standardized prestressed  
construction elements. Vop.tip.most.soor. no.4:95-114 '59.  
(MIBA 13:8)

(Railroad bridges)

(Prestressed concrete construction)

BUDBERG, V.Yu.; kand.tekhn.nauk; IVANOV-DYATLOV, A.I., kand.tekhn.nauk

Bridge span structures made of standardized elements. Transp.stroi.  
9 no.6:30-32 Je '59. (MIRA 12:11)

(Bridges, Concrete)

VARVAK, P.M.; KIRIYENKO, V.I.; CHUDNCVSKIY, V.G.; KRYLOV, V.E.; BRAUDE,  
Z.I.; FKIMYAN, V.A.; IVANKOV-DYATLOV, A.I.; FRANCOV, P.I.; ASEANDY,  
A.Ye.; BERDICHEVSKIY, N.M.; IZAKSON, S.I.; KUZLOV, V.E.; KOLESNIK,  
K.S.; KUYDICH, S.A.; SVERDLOV, A.I.; SIMON, Yu.A.; SREYINPAYN, S.R.;  
BOLOTIN, V.V.; GOL'DENELAT, I.I.

Book reviews and bibliography. Stroi. mekh. i rasch. soor. 3  
no.6:46-50 '61. (MIRA 15:4)  
(Bibliography--Structures, Theory of)

IVANOV-DYATLOV, F.G.

BURGMAN, G.P.; BIRYUKOVA, L.F.; IVANOV-DYATLOV, F.G.

Special features of leucocyte and vascular reactions  
following brain surgery. Vopr. neirokhir. 17 no.5  
27-34. Sept-Oct 1953. (CIME 25:5)

1. Of the Institute of Neurosurgery imeni Academician  
N.N. Burdenko of the Academy of Medical Sciences USSR.

IVANOV-DYATLOV, F.G.

The dynamics of the restoration of vascular reflexes after closed  
craniocerebral trauma. Vop.neirokhir. 21 no.1:26-29 Ja-F '57.

(MLRA 10:3)

1. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni  
institut neyrokhirurgii imeni akad. N.N.Bardenko Akademii  
meditsinskikh nauk SSSR.

(BRAIN, wounds and inj.

vasc. reflexes after closed inj., dynamics of restoration)

(BLOOD VESSELS, physiol.

reflexes after closed brain inj. , dynamics of restoration)



IVANOV-DYATLOV, F.G.; InGBR, I.M.

Capillary changes following mechanical action on the stem segments of the brain and electrical stimulation of the cerebellar cortex in human subjects. Vop.neirokhir. 21 no.4:21-26 Je-Ag '57.

(MIRA 10:10)

i. Nauchno-issledovatel'skiy ordena Trudovogo Krasnogo Znameni Institut neyrokhirurgii imeni akad. N.N.Burdenko akademii meditsinskikh nauk SSSR.

(BRAIN STEM, physiology,

eff. of mechanical stimulation on capillaries (Rus))

(CEREBELLAR CORTEX, physiology,

eff. of electrical stimulation on capillaries (Rus))

(CAPILLARIES, physiology,

eff. of brain stem mechanical stimulation & cerebellar cortex electrical stimulation (Rus))

IVANOV-DYATLOV, F.G., kand.med.nauk

Disorder of the activity of the cardiovascular system in children  
with craniopharyngiomas. Probl.sovr.neirokhir. 3:293-299 '59.  
(MIRA 16:6)

(PITUITARY BODY---TUMORS) (CARDIOVASCULAR SYSTEM---DISEASES)  
(CHILDREN---DISEASES)

UGRYUMOV, V. M., prof.; KONOVALOV, Yu. V., prof.; SPIRIN, B. G., kand.  
med. nauk; IVANOV-DYATLOV, F. G., kand. med. nauk.; MESHCHERYAKOVA,  
A. V.; MIKHEYEVA, Ye. V., kand. med. nauk; FEDOROV, S. N.;  
SHVORNEVA, V. Z.; D'YAKONOVA, V. Ye. (Moskva)

Disorders of respiration and their treatment in tumors of the brain.  
Vop. neurokhir. no.6:46-50 '61. (MIRA 14:12)

(BRAIN--TUMORS) (RESPIRATION)

IVANOV-DYATLOV, F.G., kand.med.nauk; KOPYLOV, M.B., prof.

Roentgenotherapy of tumors of the brain stem and the reactions  
of the cardiovascular system to the irradiation. Probl.sovr.  
neirokhir. 4:283-295 '62. (MIRA 16:2)  
(BRAIN—TUMORS) (X RAYS—THERAPEUTIC USE)  
(CARDIOVASCULAR SYSTEM)

IVANOV-DYATLOV, F.G.; NERSESYANTS, S.I.; PLEVAKO, N.S.

Disorders in cardiovascular activity during the treatment of malignant tumors of the cerebellum with X-rays. Probl. sovr. neirokhir. #54-62'57. (MIRA 16:6)

(CARDIOVASCULAR SYSTEM--DISEASES) (CEREBELLUM--CANCER)  
(X-RAYS--THERAPEUTIC USE)

IVANOV-DYATLOV, I.

"High-pressure stress on reinforced ferroconcrete tubing."

Dissertation for Doctor of Technical Sciences, Moscow Institute Railroad Transport  
Engineering (MIIZhT)

Subject: Hydroengineering Building and Construction.

Gidrotekhnicheskoye, stroitel'stvo, 12, 1946.

IVANOV-DYATLOV, I. G.

Vvedeniye v stroitel'nyu tekhniku (Int. education to Construction Techni-  
que, by) L. A. Sark, I. G. Ivanov-Dyatlov, F. I. Mikhaylov (i dr.)  
Moskva, Gos. Izd-vo Literatury po stroitel'stva i arkhitektura, 1959.

351 p. illus., diagrs.

SO: K/5  
748.1  
.S4

IVANOV-DYATLOV, I.G.

124-11-13443

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, No. 11, p 159 (USSR)

AUTHOR: Ivanov-Dyatlov, I.G.

TITLE: A Study of the Effect of the Concrete in the Tension Zone on the Behavior of Reinforced-Concrete Structural Elements Subjected to Tension and Bending.  
(Izuchenie vliyaniya betona rastyanutoy zony na rabotu rastyanutykh i izgibayemykh elementov zhelezobetonnykh konstruktsiy.)

PERIODICAL: Tr. Mosk. avtomb.-dor. in-ta, 1956, No. 1, pp 173-189.

ABSTRACT: The paper sets forth the proposition that reinforced concrete can afford a greater tensile strength if a thin armature is uniformly distributed over the working cross-section.

In addition to a zone of structural interaction, there is also a zone of force interaction between the reinforcing armature and the concrete. So long as the bond is maintained, the reinforcing armature within the concrete works as a body contained in an elastic medium, subjected to all-sided compression or tension, and having an increased modulus of

Card 1/2



124-11-13443

A Study of the Effect of the Concrete in the Tension Zone on the Behavior of Reinforced-Concrete Structural Elements Subjected to Tension and Bending

(Continued)

volumetric elasticity ( $3 \times 10^6$  kg/cm<sup>2</sup>). The containment within the concrete increases the yield point of the reinforcing steel by 10 - 26 percent.

Test results are described for centrifugally cemented reinforced-concrete pipes with an ordinary and a prestressed armature; the limit strain of the concrete with formation of cracks averaged 0.12 mm/m; the stress on the armature at which cracks appeared was 750 - 1100 kg/cm<sup>2</sup>. This is explained by the effect of zones of structural and force interaction and the appearance of a cone of increased stresses in the zones where the concrete adheres to the armature.

Deductions are made on the effect of the tension zone in the concrete on the increase in strength of the armature in beams. The Author underscores the usefulness of ceramic fillers and prestressed armatures.

(I. I. Ulitskiy)

Card 2/2

IVANOV-DYATLOV, I.G., prof., doktor tekhn.nauk; SUVORKIN, D.G., kand.  
tekn.nauk

Using expanded clay-filler concrete in highway bridge construction.  
Avt.dor. 20 no.12:12-15 D '57. (MIRA 12:4)  
(Bridges, Concrete)

~~IVANOV-DYATLOV, I., prof. doktor tekhn.nauk; SUVORKIN, D., kand.tekhn.nauk~~  
~~SHCHERONENKO, R., inzh.~~

Using expanded clay filler in large-panel housing construction.  
Na stroi. Mosk. 1 no.4:2-5 Ap '58. (MIRA 11:9)  
(Moscow--Apartment houses) (Building materials)

IVANOV-DYATLOV, I.G., prof.; AGHYEV, D.N., inzh.; LITVINENKO, M.A.,  
inzh.

Constructing and using a highway bridge built of reinforced  
keramzit-concrete. Avt.dor. 23 no.2:8-10 IF '60.  
(MIRA 13:5)

(Bridges, Concrete)

ONATSKIY, S.P., kand. tekhn. nauk; IVANOV-DYATLOV, I.G., doktor tekhn. nauk, prof., retsenzent; GERVIDS, I.A., kand. tekhn.nauk, retsenzent; KOZLOV, S.Ya., inzh., retsenzent; ROGOVCOY, M.I., laureat Gosudarstvennoy premii, nauchnyy red.; KOSYAKINA, Z.K., red. izd-va; TEMKINA, Ye.L., tekhn. red.

[Manufacture of keramzit] Proizvodstvo keramzita. Moskva,  
Gosstroizdat, 1962. 242 p. (MIRA 15:7)  
(Keramzit)

IVANOV-DYATLOV, Ivan Gavrilovich, doktor tekhn. nauk, prof.; AGEYEV,  
Dmitriy Nikolayevich; ZVEREV, Sergey Aleksandrovich;  
KONOVALOV, Stepan Vasil'yevich; KURASOVA, Galina Panteleyonovna;  
POCHTOVIK, Gennadiy Yakovlevich; RADKEVICH, Boris Leonardovich;  
SHCHEKANENKO, Rostislav Arkad'yevich; GORLOVA, N.B., red.;  
BODANOVA, A.P., tekhn. red.

[Using claydite concrete in road and bridge construction] Pri-  
menenie keramzitobetona v dorozhno-mostovom stroitel'stve. [By]  
I.G.Ivanov-Diatlov i dr. Moskva, Avtotransizdat, 1963. 271 p.  
(MIRA 16:12)

(Lightweight concrete) (Bridges, Concrete)  
(Pavements, Concrete)

IVANOV, A.M.; FALEVICH, B.N.; CHUPTOV, V.A.; IVANOV-DYATLOV, I.G.,  
doktor tekhn. nauk, prof., retsenzent; POPOVA, N.N., red.

[Laboratory work on reinforced concrete elements] Labora-  
tornye raboty po zhelezobetonnykh konstruktsiyam. Iaroslavl'  
Rosvuzizdat, 1963. 114 p. (MIRA 17:6)

1. Moskovskiy avtomobil'no-dorozhnyy institut (for Ivanov-  
Dyatlov).

LIST AND INDEX PROCESSES AND PROPERTIES INDEX

7

CA

Concentration of gallium, indium, thallium, germanium and selenium in their determination in oxide and sulfide ores. I. P. Alimarin and B. N. Ivanov-Emin. *J. Appl. Phys. Chem.* (U. S. S. R.) 9, 1124-34 (in French 1135) (1930). — The concn. of Ga is dependent on the soly. of GaCl<sub>3</sub> in H<sub>2</sub>O. Indium is concd. by deposition on Zn in HCl soln. Tl is concd. as Tl<sub>2</sub>S with (NH<sub>4</sub>)<sub>2</sub>S in the presence of KCN. Ge is distd. off as GeCl<sub>4</sub> from HCl soln. in a Cl<sub>2</sub> atm. Se is distd. off as H<sub>2</sub>Se from HNO<sub>3</sub> or H<sub>2</sub>SO<sub>4</sub> soln. The methods yield fairly rich concentrates to be used in further spectral and microchem. detn. Thirty-eight references. A. A. Podgorny

ASS. S. L. A. METALLURGICAL LITERATURE CLASSIFICATION

12041 571015174	121083 419 017 031	511111 306 1104 111
LABORS 07	LABORS 07	LABORS 07





LIST AND 2ND ORDER PROCESSES AND PROPERTIES INDEX

21

**Determination of germanium in coal ash and other commercial wastes.** I. P. Almarin, B. N. Ivanovskiy, O. A. Medvedeva and Ch. Ya. Yanovskaya *Zhurnal Khim. i Metallurg. Akad. Nauk SSSR*, 9, 271 (1949). If the ash contains over 0.05% GeO<sub>2</sub>, the method of Dennis and Johnson (cf. C. A. 17, 282) gives dependable results. In this method the GeS<sub>2</sub> is dissolved in 10% NH<sub>3</sub>, the thiogerminate is oxidized with H<sub>2</sub>O<sub>2</sub>, then evapd. in a Pt cup and ignited to GeO<sub>2</sub>. The GeS<sub>2</sub> can also be detd. by igniting the GeS<sub>2</sub> in a porcelain crucible. If it is not possible to increase the sample up to 20-100 g. the following method is used: The Ge is pptd. as germanomolybdc acid by means of p-hydroxyquinoline followed by weighing or titration of the ppt. If the ash contains chlorides it is fused with Na<sub>2</sub>O<sub>2</sub>. If there are no chlorides the sample is decompd. with a mixt. of HF and H<sub>2</sub>SO<sub>4</sub>. In the latter case the HF is driven off, the residue is mixed with 1-2 g. boric acid and distn. over with a stream of Cl<sub>2</sub> to give GeCl<sub>4</sub>. Prior to distn. Br is added to oxidize the S, S compds. and As. The distillate is decolorized with hydroxylamine-HCl. The Ge is pptd. with H<sub>2</sub>S. If the GeS<sub>2</sub> ppt. is small (0.1% or less), the detn. is finished colorimetrically or by pptn. with hydroxyquinoline, and if the ppt. is greater the detn. is finished gravimetrically as GeO<sub>2</sub>. For a sample of 2-3 g. contg. 1.0-0.1% GeO<sub>2</sub>, differences between parallel detns. did not exceed 0.02%. B. Z. Kamich

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

REGIONAL INDEX

SUBJECT INDEX

ALPHABETIC INDEX

SERIALS INDEX

137 AND 138 UNDER

PROCESSES AND PROPERTIES INDEX

AND THE OTHER INDEXES

7

Effect of germanium on the iodometric determination of tin. I. P. Alunarin and B. N. Ivanov-Kimin. *Zavodskaya Lab.* 9, 356(1940); *Chemie & Technologie* 44, 100 (1940).—In the iodometric detn. of Sn after preliminary reduction in HCl soln., the presence of Ge may interfere by sepg. along with the Sn and then redissolving in the colloidal state. The reduction products formed by GeO<sub>2</sub> react partly with the I soln., introducing an error which is negligible when there is not more than 10 mg. Ge, but becomes appreciable otherwise. A. Papineau-Couture

COMMON ELEMENTS

139-140 UNDER

141-142 UNDER

143-144 UNDER

145-146 UNDER

147-148 UNDER

149-150 UNDER

151-152 UNDER

153-154 UNDER

155-156 UNDER

157-158 UNDER

159-160 UNDER

161-162 UNDER

163-164 UNDER

165-166 UNDER

167-168 UNDER

169-170 UNDER

171-172 UNDER

173-174 UNDER

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661-662 UNDER

663-664 UNDER

665-666 UNDER

667-668 UNDER

669-670 UNDER

671-672 UNDER

673-674 UNDER

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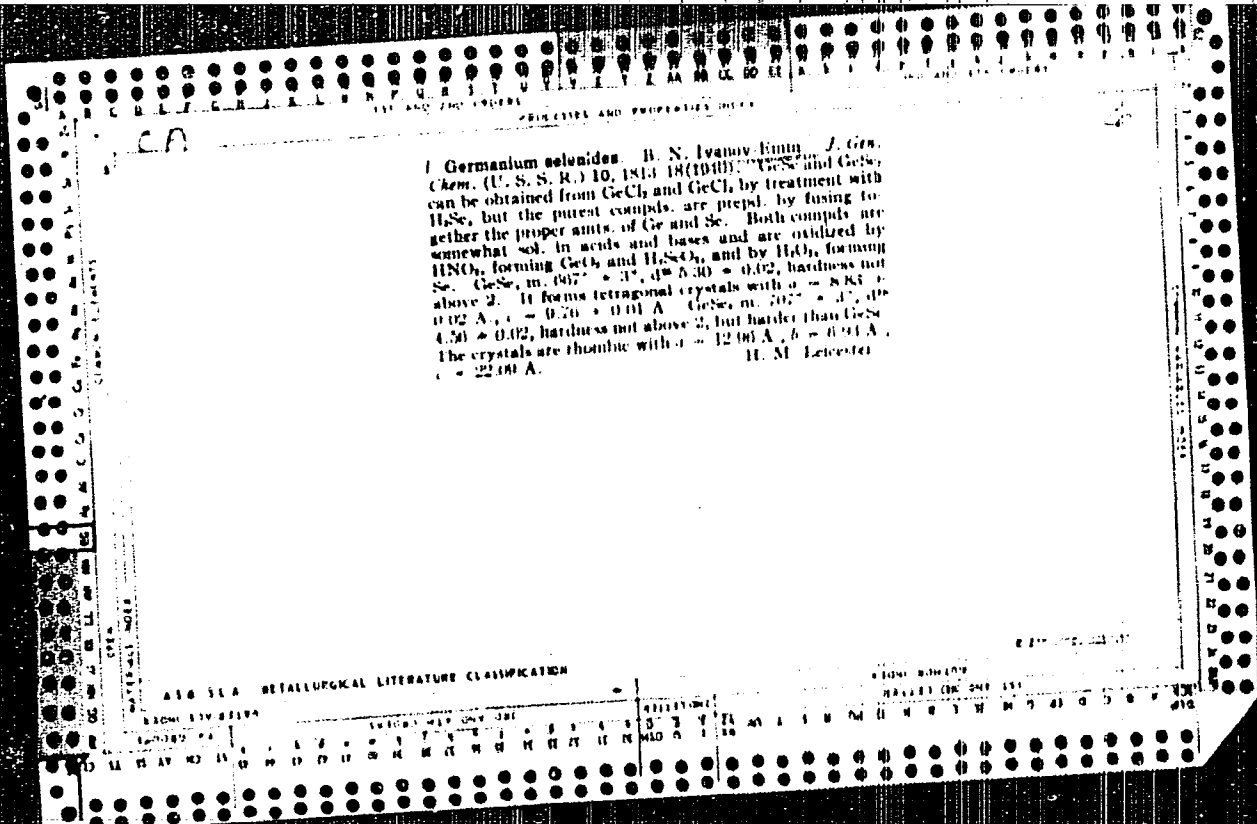
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185





PROCESSES AND PROPERTIES INDEX

21

CA

Decomposition of ash of coal for the determination of germanium. IV. I. P. Allmarin and B. N. Ivannov. Emlin. *J. Applied Chem.* (U. S. S. R.) 11, 651-5 (in French, 955) (1940); cf. C. A. 34, 5623<sup>a</sup>.—Moisten a sample (3 g.) of ash in a Pt crucible with water, add 10 cc. H<sub>2</sub>SO<sub>4</sub> (d. 1.84), 10 cc. HClO<sub>4</sub> (30%) and 25 cc. 40% HF, and heat to evolution of H<sub>2</sub>SO<sub>4</sub> fumes. Dil. the product with 75 cc. of water, add 1 g. of H<sub>3</sub>BO<sub>3</sub>, 2 cc. of Br and 200 cc. of HCl (d. 1.19) and distill. Reduce the Br in the distillate with a satd. soln. of NH<sub>4</sub>OH.HCl, det. acidity of the soln. by titration of aliquot of the distillate with 0.1 N NaOH. Adjust acidity to 4-5 N with HCl, add 1-2 g. H<sub>3</sub>BO<sub>3</sub> and sat. with H<sub>2</sub>S. After 24 hrs., filter off the GeS<sub>2</sub> ppt. and wash with 5 N H<sub>2</sub>SO<sub>4</sub>, satd. with H<sub>2</sub>S. Place the ppt. with filter paper in a porcelain crucible, wet with HNO<sub>3</sub> and burn. Finally, calcine the GeO<sub>2</sub> formed in a muffle furnace at 900-1000°.

A. A. Podgorny

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

MATERIALS INDEX

GROUPS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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LIST AND CROSS INDEX AND A TO Z INDEX

PROCESSES AND PROPERTIES INDEX

*cu* *21*

Gallium in wastes of the coking and gasification processes. V. M. Kostrikin and B. N. Ivanov-Bunin, *J. Applied Chem. (U. S. S. R.)* 13, 1408-5031 (in French, 1503) (1940).—The amt. of Ga in coal is very small but in the waste of coking and gasification processes Ga appears in a noticeable concn. because of gradual enrichment of the waste. The scheme for sepn. of Ga is a modified Morgan and Davies method (*J. C. A.* 31, 7624). A. A. P.

COVER CLASSIFICATION

MATERIALS INDEX

ASS-15A METALLURGICAL LITERATURE CLASSIFICATION

FROM SYMBOL

FROM NUMBER

GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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**Complex compounds of rhenium.** V. V. Lebedinski and B. N. Ivanov-Emin (*J. Gen. Chem. Russ.*, 1943, **13**, 253--265).—No stable complexes are formed on treating  $K_2ReCl_6$  (I) or  $K_4ReCl_{10}$  (II) with  $NH_3$ ,  $C_2H_5N$ , or  $CS(NH_2)_2$  in aq. solution. In anhyd.  $NH_3$  (I) and (II) partly dissolved, giving orange and yellowish-green solutions respectively, but no complexes were isolated. Saturated aq. solutions of (I) or (II) with a large excess of  $(CH_3NH_2)_2H_2O$  give the compound  $[ReO_2en_2Cl]$  (III), crystallizing in yellow prisms. (III) with aq. KI gives the yellow cryst. iodide,  $[ReO_2en_2I]$ , and similarly, the sparingly sol. chlorate, picrate, platinichloride, and cobaltinitrite. Addition of HCl to aq. (III) (pH 5–6) gives a red coloration at pH 2.8–3.2, violet at HCl concn. 2.5 *N*., and deep blue at 6 *N*., the change being reversible on addition of alkali. From the red solution, the compound  $[ReO(OH)en_2Cl]$  (IV) may be pptd. with EtOH; the corresponding cream-colored platinichloride  $[ReO(OH)en_2[PtCl_6]]$  and dark red iodide  $[ReO(OH)en_2I_2]$  may be pptd. from aq. solutions of (IV). Evaporation at room temp. of the blue solution or pptn. with EtOH gives pale blue needles of the compound  $[Re(OH)en_2Cl]$  (V). Heating (V) with conc. HCl gives a green cryst. substance of unknown composition. R. C. P.

Lab. Inorg. Chem., Moscow Inst. Fine Chem. Technol.  
Lab. Complex Compounds, Inst. Gen. & Inorg. Chem., AS USSR

PROCESSING AND PROPERTIES NOTES

2

The pH value in the precipitation of scandium hydroxide. J. Gen. Chem. (U.S.S.R.), 1975-4(1944) (English summary).  
 Curves are presented showing changes in pH, acid, with the H electrode, and formation of precip. on adding 0.1 N NaOH soln. to 0.005 M ScCl<sub>3</sub> (I) and 0.0025 M ScCl<sub>3</sub> (II) soln. With I, precip. begins at pH 4.50 with 1.0 equiv. of NaOH and is complete at pH 7.50 with 1.10 equiv. of NaOH, corresponding approx. to formation of Sc(OH)<sub>3</sub>·Cl·2H<sub>2</sub>O. With continued addition of NaOH, the pH rises slowly to 7.0 and 7.50 with 2.0 and 2.5 equiv. of NaOH, resp. With II, precip. begins at pH 4.50 with 0.75 equiv. of NaOH, corresponding to formation of Sc(OH)<sub>3</sub>·Cl·2H<sub>2</sub>O. After 1 equiv. of NaOH are added, the pH is 7.0-7.5. Pure II was prepd. by dissolving Sc<sub>2</sub>O<sub>3</sub> in concd. HCl, adding the theoretical amt. of H<sub>2</sub>SO<sub>4</sub>, evap. to dryness, and gradually heating to 230°.  
 J. W. Perry

A19-51A METALLURGICAL LITERATURE CLASSIFICATION

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BC

**Gallium. I. Acid properties of gallium hydroxide.** B. N. Ivanov, E. M. Emin and J. I. Rabovich (*J. Gen. Chem. Russ.*, 1944, 14, 781-785). Solutions of GaCl<sub>3</sub> titrated with NaOH using a Hg<sub>2</sub>Cl<sub>2</sub> electrode begin at pH 3.5 to ppt. colloidal Ga(OH)<sub>3</sub>, which dissolves on adding NaOH to pH 9-10 forming Na[GaO<sub>2</sub>] or Na[Ga(OH)<sub>4</sub>]. With Ga<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, formation of the insol. basic salt begins at pH 3.45. R 10

AS 554 METALLOGICAL LITERATURE CLASSIFICATION