MONGAYT, I.L.; KULAKOV, Ye.A.;ISHKHANOVA, Ye.B.; VANDYUK, N.V.

Biological purification of waste water from synthetic fiber plants.
Ochis. stoch. vod. no.3:154-166 '62.   (MIRA 16:5)
                    (Industrial wastes—Purification)

ISHKHANYAN, S. G.

"Data on the History, Occurence, Clinical Course and Epidemiology of Leprosy." Sub 30 Oct 51, Central Inst for the Advanced Training of Physicians.
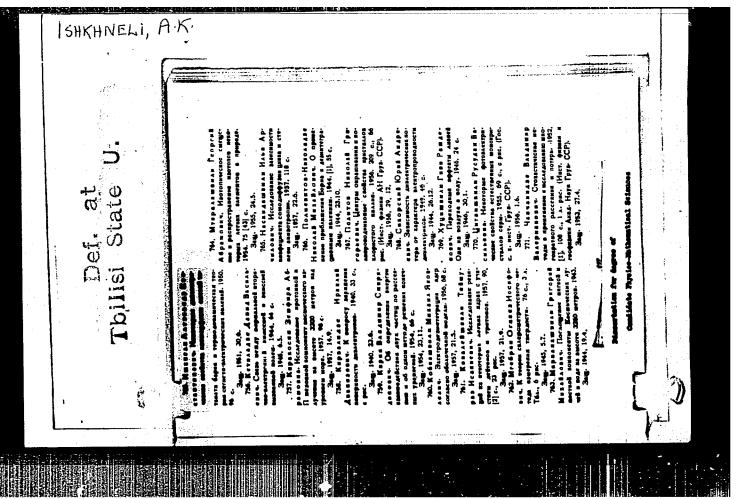
Dissertations presented for science and engineering degrees in Moscow during 1951.
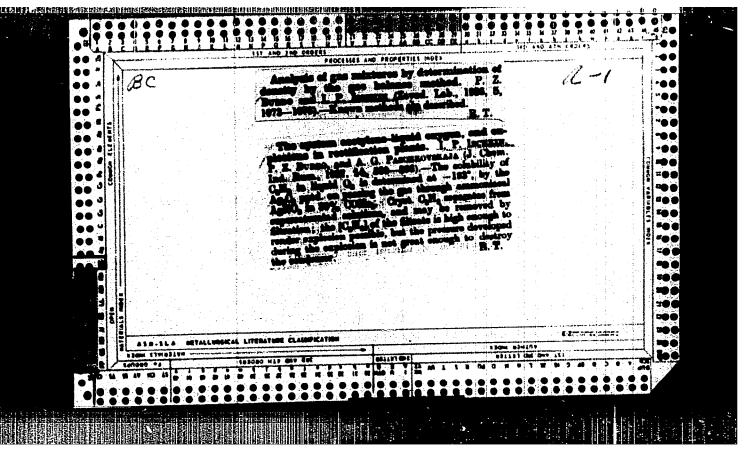
SO: Sum. No. 480, 9 May 55.

ISHKHANYAN, S.G.; BAYRAMALIBEYLI, I.T.

Comparative evaluation of the results of combined sulfonotherapy
in Azerbaijanian leprosarium. Azerb.med.zhur. no.3:58-60 Mr '60.
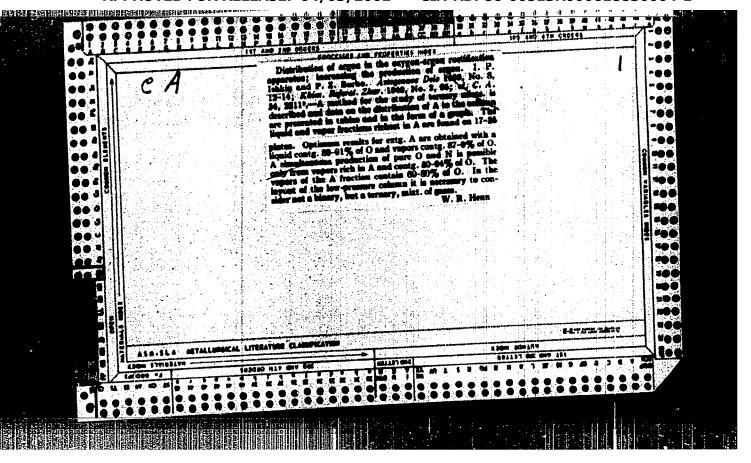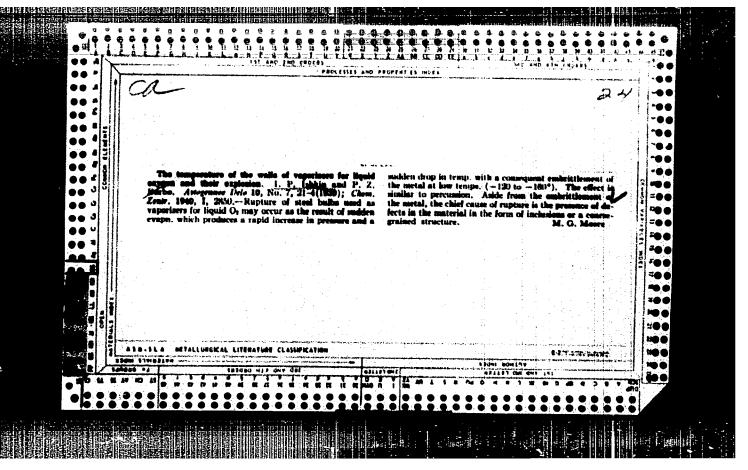(MIRA 13:6)

(SULFONES--THERAPEUTIC USE)   (LEPROSY)

ISHKHNELI, A·K·

Def. at Tbilisi State U.

c A

Distribution of argon in the oxygen-argon rectification apparatus; Instrument; the production of argon. I. P. Ishkin and P. Z. Burbo, *Avtogennee Delo* 1948, No. 8, 12-14; *Khim. Referat. Zhur.* 1939, No. 2, 68; cf. C. A. 34, 3811⁰. — A method for the study of ternary mixts. is described and data on the distribution of A in the oxygen liquid and vapor fractions richest in A are found on 17-24 plates. Optimum results for extg. A are obtained with a liquid contg. 80-91% of O and vapors contg. 87-9% of O. A simultaneous production of pure O and N is possible only from vapors rich in A and contg. 80-84% of O. The vapors of the A fractions contain 60-80% of O. In the layout of the low-pressure columns it is necessary to consider not a binary, but a ternary, mixt. of gases.

W. R. Henn

The temperature of the walls of vaporizers for liquid oxygen and their explosion. I. P. Ishlin and P. Z. Burba. *Avtogennoe Delo* 10, No. 7, 21-4(1940); *Chem. Zentr.* 1940, I, 2850.—Rupture of steel bulbs used as vaporizers for liquid O_2 may occur as the result of sudden evapn. which produces a rapid increase in pressure and a sudden drop in temp. with a consequent embrittlement of the metal at low temps. (−120 to −160°). The effect is similar to percussion. Aside from the embrittlement of the metal, the chief cause of rupture is the presence of defects in the material in the form of inclusions or a coarse-grained structure.   M. G. Moore

PROCESSES AND PROPERTIES INDEX

Solubility of solid acetylene and carbon dioxide in liquid oxygen, nitrogen and oxygen-nitrogen mixtures. I. P. Ishkin and P. Z. Burbo. *J. Phys. Chem.* (U.S.S.R.) 13, 1337-9(1939).—Exptl. data given in 2 figures and tables show that the solubilities of solid C_2H_2 and CO_2 in boiling liquid O and N and their mixts. at temps. from 77.4 to 90.0°K. obey the linear relation $\log N = -(A/T) - B$ with $A = 80.78$, $B = 4.56404$ for C_2H_2 and $A = 141.18$, $B = 3.77814$ for CO_2. F. H. Rathmann

METALLURGICAL LITERATURE CLASSIFICATION

Conditions for the simultaneous preparation of technically pure oxygen and nitrogen from air. M. B. Kal'manovich and I. P. Ishkin. *Chem. Ind.* (U. S. S. R.) 16, No. 9, 12–15(1939).—The operation of an app. with 2 rectifying columns is described, and the points at which fractions rich in A must be withdrawn, to give almost complete sepn. of O and N, are discussed.

H. M. Leicester

Obtaining krypton concentrates in air fractionation apparatus. A. I. Dmitrieva, I. P. Ishkin and M. B. Kal'manovich. J. Chem. Ind. (U.S.S.R.) 17, No. 4-5, 43-8(1940).—App. contg. a special column for rectifying the O fraction from air is described. In this app., 60-70% of the Kr can be removed from the O as a Kr-Xe concentrate.   H. M. Leicester

Prevention of explosions in the air-separating apparatus. P. Z. Barbo and I. P. Ishkin. *Avtogennoe Delo* 1941, No. 1, 23-5; *Khim. Referat. Zhur.* 4, No. 7-8, 128 (1941).—Explosions of air-sepg. app. are due to the presence of C_2H_2 in the liquid O. An absorption method for the purification of O from C_2H_2 has been developed: SiO_2 gel is used as the absorbing agent. The method for connecting the absorbers to the air-sepg. column is described in detail. The SiO_2 gel satd. with C_2H_2 is non-explosive in the presence of liquid O.   W. N. Henn

1654.   LOW PRESSURE PLANT OF CLARK FIRM FOR PRODUCTION OF GASEOUS OXYGEN. Reshetnikov, N. F. and Ishkin, B. P. (Kislorod (Oxygen), 1946, vol. 3, (5), 26-34; abstr. in Chem. Zentr., 1948, vol. 1, 1096, and in Chem Abstr., 1950, vol. 44, 9641).

The semi-portable equipment described uses a cold cycle operating between pressures of 5.5 and 7.0 atms.

CA

Method for the prevention of explosions in apparatus for the separation of air into its components. I. P. Ishkin and P. S. Burbo. *Kislorod* 4, No. 3, 21-34(1947); *Chem. Zentr.* 1949, 721.—A new method is reported for the removal of C_2H_2 from the air. The method is based upon a study of the system C_2H_2-liquid O_2, of the dynamics of the adsorption of C_2H_2 from O_2-N_2 soln., and the explosibility of the adsorbent (silica gel). The CO_2- and moisture-free air passes through a preheater and a spiral coil and then through a throttle valve into the 1st column. The volatile fractions obtained in this column are passed into the 2nd column where, as usual, the N_2 is lead off through a N_2 throttle valve. The liquid from the evaporator, which is a soln. of C_2H_2 in O_2 and N_2, is led from below through an adsorber contg. silica gel. The C_2H_2-free liquid passes through the O_2 throttle valve into the 2nd rectifying column. Expts. with the silica gel indicated that explosions occurring during work with C_2H_2 were due to a decompn. of the C_2H_2 in the gas phase when present in a mixt. with O_2.   M. G. M.

ISHKIN, I. P., Engineer

"Distribution of Argon in an Oxygen-Argon Separating Apparatus and a Method for Intensifying the Process of Its Production." Sub 16 Apr 47, Moscow Order of Lenin Chemico-technological Inst imeni C.I. Mendeleyev

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

ISHKIN, I.P.

Burbo, P.Z. and Ishkin, I.P. "Drying air with silica gel," Kislorod,
1948, No. 5, p. 1-10 - Biblicg: 10 items

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

ISHKIN, I. P.

ISHKIN, I. P. and SEREBRYANSHAYA, B. I. "Expand the production of compressors and flasks for the oxygen industry", (First portion), Kislorod, 1948, No. 6, P. 1-4.

SO: U-3042, 11 March 53, ("etopis'Zhurnal 'nykh Statey, No.7 1949).

ISHKIN, I. P.

ISHKIN, I. P. and SEREBRYANSKAYA, B. I. "Cold losses in vessels to preserve and transport liquid oxygen", Kislorod, 1948, No. 6, p. 16-22.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No.7 1949).

CA

The distribution of pores according to size in porous bodies. - I. P. Ishkin and M. O. Kananer (Inst. Oxygen Mech. Eng., Moscow), Zhur. Fiz. Khim. 24, 843-58 (1950). - The conditions for motion of 2 systems (more or less inert: liquids or gas and liquid) through a porous medium were established. The system gas/liquid was studied experimentally and theoretically. The method for detg. the distribution of pores according to size in porous bodies was improved; the pressure and rate of flow of gas through a porous body immersed in a liquid were measured. The method was useful for the construction of the structural curves for cemented porous bodies with a pore radius of from 10 to several hundred microns. The distribution according to size agrees with the Maxwell distribution equation.

Paul W. Howerton

PA 236T100

"Thermodynamic Analysis of Irreversible Low-Temperature Processes. II. Analysis of Individual Irreversible Processes in Low-Temperature Technology," I. P. Ishkin and V. M. Brodyanskiy

Authors derive formulas for computation of the coefficients of thermodynamic reversibility and astaticity, concepts of which were introduced in Part I. On the basis of these two new coefficients,

236T100

the authors make subject analysis and point out the possibility of a general method for analyzing all processes in refrigerator and thermal installations. Indebted to Prof A. A. Gukhman.

236T100

Dissertation: "Protection of the Air Fractionation Apparatus From Acetylene." Dr
Tech Sci, Moscow Chemicotechnological Inst, Moscow, 1953. (Referativnyy Zhurnal--
Khimiya, Moscow No 5, Mar 54)

SO: SUM 243, 19 Oct 1954

USSR/Statistical Physics - Thermodynamics.   D-3

Abs Jour   : Referat Zhur - Fizika, No 5, 1957, 11433

Author   : Ishkin, I.P., Kaganer, N.G.
Inst   :
Title   : Investigation of Thermodynamic Properties of Air and Nitro-
              gen at Low Temperatures Under Pressure. I. Determination
              of the Isothermal Throttle Effect of Air and Nitrogen.

Orig Pub   : Zh. tekhn. fiziki, 1956, 26, No 10, 2329-2337

Abstract   : Description of a setup for the determination of the isother-
              mal throttle effect of gases; the isothermal throttle ef-
              fect of air and nitrogen was determined in a temperature
              range from 30 to -183° C at pressures from 1.5 to 50
              atmos. The magnitude of the effect of the air and of the
              nitrogen diminishes with increasing pressure at temperatu-
              res above -50° C, and increases at temperatures less than
              -50° C. The magnitude of the isothermal throttle effect
              of saturated vapor passes through a minimum

Card 1/2

ISHKIN, I.P.

On the basis of the experimental results described by part I (Žurn.techn.fis,
26, 2329 (1956)) the thermodynamic parameters and the thermodynamic state
diagrams of air and oxygen are determined. These diagrams are supposed to be
more accurate than those previously published. In the course of the construc-
tion of these diagrams the following additional data were used: saturation
pressure, heat capacity of the liquid, evaporation heat, thermal capacity of
the gas at infinitely low pressure. Next, the formulae used here for the
computation of the following thermodynamic parameters are given: entalphy,
entropy, and specific volume. In the present work the pressure ranges were
extended up to pressures of 200 atm. Measuring results of the differential and
of the integral adiabatic throttle effect of air are in sufficiently good
agreement at pressures of more than 50 - 60 atm. For the computation of the
thermodynamic parameters and for the construction of the diagrams the data ob-
tained by H.HAUSEN, Forschungsarb.a.d.Geb.Ingenieurwes. H.274 (1926) were
used. Deviations and necessary corrections are mentioned.

USSR/Physical Chemistry - Thermodynamics, Thermochemistry,   B-8
        Equilibria, Physical-Chemical Analysis, Phase Transitions.

Abs Jour   : Ref Zhur - Khimiya, No 1, 1958, 330

composition within the temperature range from 26 to -140°
and under pressures up to 48 abs at that the divergence
of values of the isothermal choking effects from additive
values is positive at a high temperature and under low
pressure and it is negative at a low temperature and a
high pressure. The thermodynamical properties of Ar were
computed and graphs were plotted on co-ordinates enthalpy
- temperature, temperature - entropy and pV/RT - pressure.

Card 2/2

AUTHORS: Ishkin, I.P., Doctor of Technical Sciences   67-58-3-16/18
               Katina, N.F., Engineer - Consultants

TITLE: Technical Consultation (Tekhnicheskaya konsul'tatsiya)
               Reply to Readers' Questions (Otvety chitatelyam)

PERIODICAL: Kislorod, 1958, Vol, 11, Nr 3, pp. 45-45 (USSR)

ABSTRACT: To Tov. Boltenkov:
               Question: Is it possible, in the case of the permanent absence of
               acetylene in the liquid of the vaporizer and in liquid oxygen, to
               reduce the prescribed analyses undertaken for the purpose of de-
               termining acetylene to a minimum, e.g. to carry it out only once
               in one day, and to continue working in accordance with instruc-
               tions only if the presence of acetylene has actually been estab-
               lished ? This question is raised in connection with the fact that
               the oxygen station concerned is located in a high mountainous
               region where the air is always pure and acetylene could never be
               found to be present in the apparatus in the course of the analyses
               carried out in accordance with instructions in the course of two
               years.

Card 1/2   Answer: Independent of the fact whether acetylene was found to

Technical Consultation. Reply to Readers' Questions   67-58-3-16/18

be contained in the evaporation liquid or in the liquid oxygen
or not, control analyses must be carried out in accordance with
instructions. In consideration of special local conditions, your
chief engineer may order the working instructions to be modified
to the extent he may deem opportune under the given circumstances.

1. Acetylene--Determination   2. Oxygen--Production

Card 2/2

AUTHORS: Ishkin, I. P., Doctor of Technical Sciences,   SOV/67-58-4-18/29
                Katina, N. F., Engineer

TITLE: Reply to Readers (1) (Otvety chitatelyam)

PERIODICAL: Kislorod, 1958,   Nr 4, p 42   (USSR)

ABSTRACT: To: Ibragimov and Munasypova of Begovat, Tashkentskaya Oblast'.
                Question: Is absorption of acetylene from the air on the solid
                caustic on the drying block possible ?
                Answer: Investigations of this problem carried out by the VNIIKIMash"
                (All-Union Scientific Research Institute for the Construction of
                Oxygen Machines) showed that such an absorption cannot be found to
                occur in the case of an acetylene content in the air of up to
                $0,2$ cm^3/m^3.
                Question: What precautions must be taken in connection with oxygen
                condensers ? Answer: As starting, e.g. in the case of the
                apparatus KG-30, takes 18-24 hours, and as in the case of existing
                working conditions the presence of acetylene gas in air is quite
                possible, it is possible that solid acetylene forms in the lower
                column of the apparatus during starting, which may cause an ex-

Card 1/4   plosion. It is therefore expedient to see to it that reliably pure

air is conveyed through the pipes from outside. These pipelines can
also be fitted with acetylene-absorbers.
Question: Where are apparatus for the determination of acetylene
(in air) available ? Answer: Such a device can be made according
to drawings and descriptions available from VNIIKIMash.
Question: Is it necessary to take the correction with respect to
the loss of acetylene when determined by the condensation-color-
imetric method into account ? Answer: This is not necessary be-
cause errors remain within permissible limits.
Question: Must the colorimetrization scales be submitted for con-
firmation to the chief engineer ? Answer: Colorimetrization
scales for the determination of acetylene content can be worked
out by any laboratory, but they must be confirmed by the head of
the laboratory.
Question: Why is it not possible to determine the acetylene content
in the liquid of the vaporizer by analysis in spite of the fact
that at the same time considerable quantities of acetylene are
found to be contained in the condenser ? Answer: With the 0.5 1

Card 2/4   test it is possible to determine the acetylene content if its

Reply to Readers (1)   SOV/67-58-4-18/29

concentration is not less than 0,009 cm^3/l. In the case of a lower
concentration it may not be possible to determine it, but it may
accumulate in the liquid oxygen in the condenser.
Question: What method should be employed for the purpose of
determining acetylene in air ? Answer: The method mentioned in
"Vestnik Instituta fizicheskoy khimii AN USSR" (Reports of the
Institute of Physical Chemistry, AS Ukr SSR), 1956, Vol. 13,
pp. 147-151 must be employed.
Question: Is it possible to carry out a control-examination of the
unused remnants of the lye solution by means of the potentiometric
method ? Answer: There exist more simple methods as e.g. the
method of titration (1N HCl).
Question: What are the last constructional changes carried out with
respect to the oxygen plant KG-30 ? Answer: The production of such
plants was stopped in 1955. Instead, new oxygen plants of the type
KGN-30 are now being built by the I. Moscow Autogenous Plant and
the Odessa Plant for the building of autogenous machines.

Card 3/4

Reply to Readers (1)   SOV/67-58-4-18/29

1. Acetylenes   2. Oxygen   3. Colorimetry

Card 4/4

AUTHORS: Ishkin, I. P., Doctor of Technical Sciences,   SOV/67-58-4-24/29
Katina, N. F., Engineer

TITLE: Reply to Readers (7) (Otvety chitatelyam)

PERIODICAL: Kislorod, 1958,   Nr 4, p. 44-44 (USSR)

ABSTRACT: To: A. G. Apostolov of Nikolayev, Oblast'.
Question: Is it possible to regenerate a lye solution which was
saturated with carbon dioxide from the air in the course of
operation ? Answer: In chemical works regeneration of this kind
is carried out with the solution of calcium hydroxide. In view
of working conditions at oxygen stations this is not done be-
cause such a process would be unprofitable with respect to the
small quantities concerned.
Question: What kind of leather is used for the purpose of making
sleeves for piston rods ? Answer: For this purpose chromed
leather (in accordance with GOST 1898-48), which is specially
prepared, is used. The leather is saturated with synthetic wax
having a dissolution heat of 82-88° or with a mixture of hydro-
carbon having a dissolution heat of 56-60°. Saturation is carried
out at 95°. The sleeve is then punched in a hot condition and

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Reply to Readers (7)

left in the punch until cooled.

1. Sodium hydroxide—Regeneration   2. Potassium hydroxide—
Regeneration   3. Leather—Applications   4. Leather—
Properties

Card 2/2

SOV/24-58-5-7/31

AUTHORS: Brodyanskiy, V. M. and Ishkin, I. P. (Moscow)

TITLE: Thermodynamic Analysis of Irreversible Processes in Refrigerating Plants (Termodinamicheskiy analiz neobratimykh protsessov v kholodil'nykh ustanovkakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 5, pp 40-45 (USSR)

ABSTRACT: Losses due to irreversibility in refrigerating plants are normally analysed by comparison of actual cycles with the Carnot cycle. Assessment of the thermodynamic efficiency of the cycle demands complicated constructions. A simple graphical method of determining the thermo-dynamic coefficients of various cooling cycles is outlined which is based on earlier work of the authors. Schematic diagrams outline three systems:
1. An air compressor and air expansion turbine cycle.
2. A conventional vapour compression and expansion valve system.
3. An absorption system.
Under each diagram is a linear representation of the heat and work quantities introduced and taken out of the cycle by the individual elements of the cycle. Heat or

Card 1/5

SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating
Plants

work put into the system at each unit is represented by
an appropriate length of line running from left to
right, and heat or work taken out of the system by
lines running from right to left immediately below the
input lines. For simplification insulation losses are
ignored. This linear representation of heat or work
input and output at the various units of the system
reappears as the central abscissa of a coordinate plot
of energy quantities, of which, Fig.4, p.42, is
typical; it gives the $Q - K_t$ diagram for an air
expansion cooling system. The ordinate in the
diagram is a quantity $K_t = 1 - T_0/T$ where T_0 is
the temperature of the medium surrounding the system
and T is the temperature of the working substance at
different points in the cycle and virtual temperature
in relation to work. When $K_t = 1$, $T = \infty$ when $K_t = 0$,
$T = 293°K$ (i.e. T_0) and when $T = 0°K$, $K_t = -\infty$
(corresponding to an infinite amount of work). In
Fig.4 the large rectangular area bounded by $K_t = 1$ at
the top and L_1 on the abscissa is proportional to

Card 2/5

SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating
Plants the amount of energy put in by the compressor. The area
bound by the curve below the abscissa and the heat quantity Q_4 is propor-
tional to the energy entering the system through the evaporator
(i.e. the heat taken out of the body being cooled).
These areas are considered as positive. The smaller
rectangular area bounded by $K_t = 1$ at the top and L_2
on the abscissa is proportional to the energy expended
in the expansion turbine, and the fourth area bounded
by the curve above the abscissa and the heat quantity Q_3
is proportional to the energy taken out of the system
by the cooler (i.e. a heat exchanger between the
compressor and the expansion turbine). These two
latter areas are considered as negative. The difference
between the positive areas and the negative areas is
proportional to the "external" loss due to irreversi-
bility in the cycle. The ratio between the negative
quantities and the positive quantities gives a
"coefficient of thermodynamic reversibility" for the
actual cycle. The full lines and the dotted lines in
the diagram indicate the temperature level of the
working substance, and that of the cooling medium (in
Card 3/5   the case of the cooler curve) or that of the body being

SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating
Plants

cooled (in the case of the evaporator curve). The
shaded area between the full and dotted lines represents
an "external" irreversible loss in the system through
imperfect heat transfer. The ratio of the area below
the abscissa, representing the heat energy entering the
system at the evaporator (i.e. heat taken out of the
cooled body), to the area representing work energy put
into the system by the compressor, gives the so-called
"coefficient of thermodynamic reversibility of cooling".
The advantage of this method of representation is that it
enables direct evaluation to be made of these
"coefficients of thermodynamic reversibility". The
usual T - Q diagram gives areas whose algebraic sum is
always equal to zero. The coefficients obtained by
this method are an immediate measure of the efficiency
of the cooling cycle. Further diagrams are given which
detail the losses due to "external" irreversibility in
the evaporator element of the cooling cycle. These are
plotted on a similar co-ordinate system for various
conditions of heat exchange, cross-flow, counterflow,
etc. Minimum loss occurs where the cooled body changes

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SOV/24-58-5-7/31

Thermodynamic Analysis of Irreversible Processes in Refrigerating Plants

its temperature, spatially, at the same rate as the working substance. The analysis concludes with observations on "internal" irreversibility due to the "energy mass" of the various elements of the cycle. (cf. thermal mass and inertia). Attention is drawn to the importance of attaining good efficiencies in the units where the "energy mass" is high. The authors refer to "B - I" diagrams given in an earlier paper (Ref 8). These give the necessary functions for determining the "energy mass" more conveniently than the conventional entropy diagrams.
There are 5 figures and 9 references, 6 of which are Soviet, 2 English, 1 German.

SUBMITTED: December 17, 1956

Card 5/5

AUTHOR: Ishkin, I. P., Professor, Doctor of   SOV/67-11-5-14/18
             Technical Sciences

TITLE: On the Causes of Explosions in the Lower Columns of
             Oxygen Apparatuses (O prichinakh vzryvov v nizhnikh
             kolonnakh kislorodnykh apparatov)

PERIODICAL: Kislorod, 1958, Vol 11, Nr 5, pp 65 - 68 (USSR)

ABSTRACT: Comrade Zheltov asks in a letter to inform him
             about the causes of explosions in the lower columns
             of plants for oxygen liquefaction. The author answers as
             follows: The directions for the prevention of ex-
             plosions are insufficiently complied with. Evaporation
             of the liquid air in the lower columns during
             the standstill. The liquid not being allowed to flow
             away, if more than 0.4 cm^3 acetylene are observed.
             A larger amount of acetylene in the air of the
             working place. The presence of acetylene in oxygen
             is especially dangerous because the latter readily
             ignites with acetylene. Acetylene in liquid air and
Card 1/2   liquid nitrogen is less dangerous. There are 3

25(5)
AUTHORS:

Ishkin, I. P., Professor, Doctor of   SOV/67-59-2-7/18
Technical Sciences, Katina, N. F., Engineer

TITLE:

Adsorptive Purification of Air From Acetylene and Carbon Di-
oxide in Plants for Gaseous and Liquid Commercial Oxygen
(Adsorptsionnaya ochistka vozdukha ot atsetilena i dvuokisi
ugleroda na ustanovkakh tekhnicheskogo gazoobraznogo i zhid-
kogo kisloroda)

PERIODICAL:

Kislorod, 1959, Nr 2, pp 37-38 (USSR)

ABSTRACT:

Various methods have hitherto been devised whereby air used,
for engines driven by compressed gas is purified from acetyl-
ene by adsorption (Ref 1); further, experiments were made
concerning the purification of air from acetylene and carbon
dioxide at low temperatures (Ref 2). In this experiment the
authors investigated the possibility of purifying air si-
multaneously from acetylene and carbon dioxide by way of ad-
sorption. For this purpose, the process of adsorbing acetylene,
carbon dioxide, and simultaneously a mixture of both at low
temperatures and high pressure, both under dynamic and static
conditions, was investigated in the VNIIKIMASh (All-Union
Scientific Research Institute for the Construction of

Card 1/2

Adsorptive Purification of Air From Acetylene and   SOV/67-59-2-7/18
Carbon Dioxide in Plants for Gaseous and Liquid Commercial Oxygen

Oxygen Plants). The capacity of various commercial adsorbents
for CO_2 was investigated. From among the used adsorbents
the active carbon AG-2 and the crumbly silica gel KSM exhib-
ited the strongest adsorptive power. Besides, the authors in-
vestigated the conditions of desorption from the adsorbents.
As a result, virtually the whole quantity of acetylene and
carbon dioxide was adsorbed at temperatures of between -100
and -160° and at high pressure. The data obtained served the
purpose of designing commercial adsorbers for oxygen plants.
There are 6 references, 2 of which are Soviet.

Card 2/2

5(4)

AUTHORS: Filippova, G. P., Engineer,   SOV/67-59-2-8/18
              Ishkin, I. P., Professor, Doctor of Technical Sciences

TITLE: Viscosity of Air and Argon at Temperatures of Between 0 and
              -183° C and Pressures of Between 1-150 Atmospheres Absolute
              Pressure (Vyazkost' vozdukha i argona pri temperaturakh ot
              0 do -183° C i davleniyakh ot 1 do 150 ata)

PERIODICAL: Kislorod, 1959, Nr 2, p 38 (USSR)

ABSTRACT: There are no data available in publications on the viscosity
              of the afore-mentioned gases at pressure and low temperatures,
                    already indicated by other authors (Refs 3,4,5).
              In order to fill this gap, the Physico-technical Laboratory
              of the VNIIKIMASh devised a method for determining the vis-
              cosity of compressed gases at low temperatures. This method
              is a new variant of the flow method. Accordingly, the gas
              passes through two capillary tubes, a determinant and a com-
              parative capillary. In the latter atmospheric pressure and
              room temperature prevail. The desired viscosity is proportional
              to the ratio of pressure drop in both capillary tubes. A table

Card 1/2

- Viscosity of Air and Argon at Temperatures of Between   SOV/67-59-2-8/18
  0 and -183° C and Pressures of Between 1-150 Atmospheres Absolute Pressure

        contains data on the dynamic viscosity of the air and argon
        at low temperatures in dependence of pressure. There are 1
        table and 5 references, 3 of which are Soviet.

Card 2/2

89930

S/170/61/004/003/009/013
B117/B209

26.1160

AUTHORS: Filippova, G. P.; Ishkin, I. P.

TITLE: Viscosity of air, nitrogen, and argon at low temperatures and
                pressures of up to 150 atm

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 3, 1961, 105-109

TEXT: The authors employed a new standard method of determining the viscos-
ity of gases at temperatures from $+20°$ to $-196°C$ and at pressures of up to
150 atm. The method is based on the principle that the gas flows through
two capillary tubes. Through one of the capillaries, the gas flows at a
preset pressure and temperature; through the other tube, i. e., the standard
capillary, it streams at nearly atmospheric pressure and room temperature.
When the masses of gas streaming through both capillaries are adjusted to
be equal, one can derive a formula for calculating the kinematic viscosity:
$\nu_1 = F\nu_2 \Delta p_1/\Delta p_2$, where ν_1 denotes the kinematic viscosity of the gas in the
test tube, F the constant of the arrangement, ν_2 the kinematic viscosity of
the gas in the standard tube; Δp_1 and Δp_2 are the pressure gradients in the
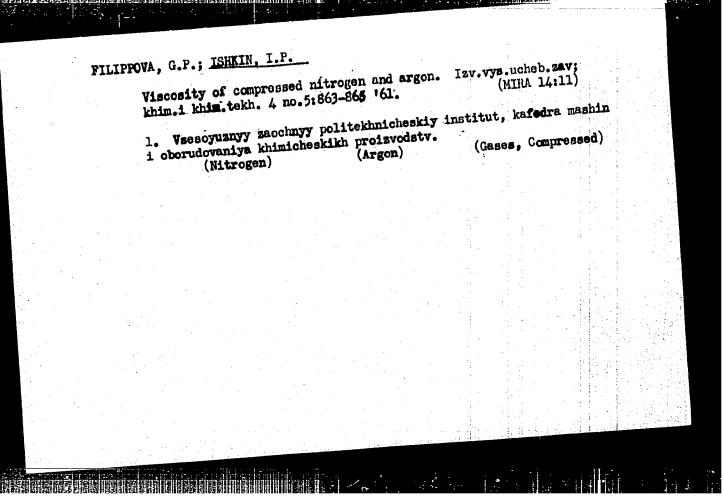
Card 1/3

69930

S/170/61/004/003/009/013
B117/B209

Viscosity of air ...

capillaries. As the determination of F requires much time, a much simpler relative method is used for this purpose. In this case, F is found on the basis of gauge tests when the viscosity of the gas in the test tube is known. The maximum error in the determination of the kinematic viscosity coefficient amounts to 3%. The accuracy of the results may be improved by repeated experiments. Interpolated viscosity curves supply values with an accuracy of up to 1-1.5%. The authors determined the viscosity of water, nitrogen, and argon between 0° and -183°C and at pressures of up to 150 atm; the viscosity of hydrogen was determined at -100°C. A comparison between the values obtained and those of other authors shows good agreement. The maximum deviation is 1.5%. The values of the kinematic viscosity were calculated by averaging over several (2 - 13) experiments in the case of maximum pressure fluctuations of ±1 atm. The dynamic viscosity was ascertained from a transformation of kinematic viscosity. The density of air, nitrogen, and argon was calculated from their compressibility. The isobaric lines were continued until 50°C according to data of I. F. Golubev (Fig. 1). The entire character of the family of curves corresponds to that of other substances near the critical point. The authors thank I. F. Golubev for valu-

Card 2/3

FILIPPOVA, G.P.; ISHKIN, I.P.

Viscosity of compressed nitrogen and argon. Izv.vys.ucheb.zav;
khim.i khim.tekh. 4 no.5:863-865 '61.   (MIRA 14:11)

1. Vsesoyuznyy zaochnyy politekhnicheskiy institut, kafedra mashin
i oborudovaniya khimicheskikh proizvodstv.
         (Nitrogen)   (Argon)   (Gases, Compressed)

27548
S/170/61/004/010/002/019
B109/B125

5.1210

AUTHORS: Filippova, G. P., Ishkin, I. P.

TITLE: Calculation of the viscosity of compressed gases by means of the similarity method

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 10, 1961, 9 - 14

TEXT: The methods used so far in approximatively calculating the viscosity of compressed gases are not satisfactory. The authors present a new technique of calculating the viscosity of compressed gases from critical temperature and pressure. Density must be known. The essence of this very accurate method is the proper choice of the dimensionless quantities $\sigma = \rho^{4/3} T_{cr}^{7/6} / \Delta \eta P_{cr}^{2/3} M^{5/6}$ and $\omega = \rho T_{cr}/P_{cr} M$. ρ denotes the density, T_{cr} - the critical temperature, η - the viscosity, $\Delta \eta = \eta_{T_{cr}} - \eta_T \cdot P_{cr}$ is the critical pressure, M - the molecular weight. L. P. Filippov (Dissertatsiya, MGU, 1951) and A. S. Predvoditelev (Sbornik, posvyashchennyy P. P. Lazarevu, 1956, str. 84 - 112) interrelated the above dimensionless

Card 1/5

27548
S/170/61/004/010/002/019
B109/B125

Calculation of the viscosity of ...

quantities through the equation $\sigma = \alpha - \beta \omega$, where the dimensionless
quantities α and β are identical for similar substances. The authors
found the same relation $\sigma = 5.33 - 0.0387 \omega$ (7) for N_2, O_2, CO, CO_2, CH_4,
C_2H_4, C_2H_6, and C_3H_8. Consequently, this relation can be used for calcu-
lating the viscosity of a compressed gas in a wide temperature and pressure
range. Only critical temperature and critical pressure must be known.
The accuracy of formula (7) was checked with CO_2. It proved to be
positively superior to the methods of Enskog, Shirokov, Panchenkov,
Stolyarov, and Golubev (Table 1). Because of the great significance of
this method in engineering, the dynamic viscosity of oxygen was calculated
for the temperature range between 200 and -100°C at pressures of up to
400 atm. The known quantities were $T_{cr} = 154.8°K$ and $P_{cr} = 51.7$ atm. The
results are shown in Fig. 3. O. I. Leypunskiy (Sb. trudov po tekhnicheskoy
fizike, 1948, str. 31) and M. G. Gonikberg (ZhFKh, 2, 7, 1947) are mentioned.
There are 3 figures, 1 table, and 17 references: 13 Soviet and 4 non-Soviet.
The three most recent references to English-language publications read as
follows: Uyehara O. A., Watson K. M. Nat. Petroleum News, 36, 764, 1944.

Card 2/5

27548

S/170/61/004/010/002/019

Calculation of the viscosity of ...   B109/B125

Pitzer K. S., Journ. of the American Chemical Society, 77, July 16, No. 13, 1955. Grunberg L. Ind. Eng. Chem., 42, 5, 885, 1950.

ASSOCIATION: Vsesoyuznyy zaochnyy politekhnicheskiy institut, g. Moskva
               (All-Union Correspondence Polytechnic Institute, Moscow)

SUBMITTED: April 17, 1961

Table 1. Change in the viscosity of CO_2 at 100°C with pressure. Legend: (1) P, atm, (2) experimental $\eta \cdot 10^7$ g/cm·sec, (3) from the formula by Enskog, Shirokov, Panchenkov, Stolyarov, Golubev.

Card 3/5

S. 111S

17.1153

S/080/61/034/012/005/017

31471

D243/D305

AUTHORS: Ishkin, I.P., and Katina, N.F.

TITLE: Statics of the absolute adsorption of carbon dioxide from mixtures with nitrogen at atmospheric pressure (1st report of a series of papers on the adsorption of carbon dioxide from air at low temperatures)

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 12, 1961, 2623 - 2627

TEXT: The present series of papers was devoted to the study of the properties of industrial adsorbents during the removal of carbon dioxide from air mixtures, at a concentration of 300 cm^3 CO_2 per 1 m^3 of air, at low temperatures, high and low pressures, and in static and dynamic conditions. The authors state that, hitherto, investigations in this field had only been carried out above $-86^{\circ}C$ and in static conditions. Data for the isotherms were obtained by the dynamic method. In preliminary tests the static capacity of the following adsorbents was determined at $-110^{\circ}C$ and CO_2 concentration of from 0 to 300 cm^3/m^3; AГ-2 (AG-2) activated carbon, KCM (KSM)

Card 1/3

31471
S/080/61/034/012/005/017
D243/D305

Statics of the absolute ...

and KCK (KSK) silica gel, activated alumina, and three ultraporous silica gels - CY (SU), C200 (S200) or No. 6 granulated silica gel, and C204 (S204). These tests showed that KSM lump silica gel and S200 ultraporous silica gel were the best adsorbents. The isotherms of absolute adsorption for these two and activated alumina were plotted at temperatures of -78.5° to $-140^\circ C$ and concentrations of $0-2400$ cm^3/m^3. The main physical features of the three adsorbents are given. [Abstractor's note: No details of the other adsorbents listed are given]. Data obtained showed that the absolute static capacity of the adsorbents increased considerably with temperature fall. S200 silica gel had the greatest adsorption capacity being approximately 1.5 times that of KSM silica gel. Activated alumina had the lowest capacity, but may find use in adsorbers because of its greater stability. Identical mixtures gave different shaped isotherms showing the importance of adsorbent structure for the ad-sorption process: The curves only approximated to the single sub-stance curves of Langmuir and Freundlich, despite the very low car-bon dioxide content. The increase of the adsorption of KSM silica gel with concentrations greater than 0.0021 molar parts of CO_2 only

Card 2/3

31471
S/080/61/034/012/005/017
D243/D505

Statics of the absolute ...

holds at atmospheric pressure and not for mixtures compressed to
more than 7 atmospheres. There are 2 figures, 1 table and 13 refe-
rences: 8 Soviet-bloc and 5 non-Soviet-bloc. The reference to the
English-language publication reads as follows: S. Brunauer, P.
Emmett, J. Am. Chem. Soc., 59, 2682, 1937.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut kislo-
rodnogo mashinostroyeniya (All Union Scientific Re-
search Institute of Oxygen Machine Construction)

SUBMITTED: August 4, 1960

Card 3/3

5. 1115
17.1153

31472
S/080/61/034/012/006/017
D243/D305

AUTHORS: Ishkin, I.P., and Katina, N.F.

TITLE: Statics of the differential adsorption of carbon
             dioxide from air at high pressures (2nd of a series
             of reports on the adsorption of carbon dioxide at
             low temperatures)

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 12, 1961,
             2628 - 2633

TEXT: The static capacity of adsorbents at high pressures was
found by absorption of carbon dioxide from compressed air, contain-
ing 0.0003 molar parts of CO_2. Measurements were taken on an appa-
ratus described by Ishkin and Katina (Ref. 1: Zh.P.Kh. XXXIV, 12,
2623, 1961) modified to deal with air under pressure. Compressed
air passed slowly through the adsorber the pressure in the latter
being controlled by high pressure microvalves placed in the air cur-
rent before and after the adsorber; two microvalves, placed in se-
ries in front of the adsorber ensured accurate control of the air

Card 1/3

31472
S/080/61/034/012/006/017

Statics of the differential ...   D243/D305

supply. On completion of adsorption the pressure was brought to
atmospheric and desorption proceeded in the normal way, beginning
at $-80^\circ C$. The differential adsorption capacity for KCM (KSM), No. 6
and KCK (KSK) silica gels and activated alumina were determined at
$-120^\circ C$ and in the pressure range 1-140 atm.   KSM and No. 6 silica
gel had the greatest static capacity and the differential adsorp-
tion isotherms for the substances were plotted. It was found that
adsorbent capacity rises initially to a maximum between 15-25 atm.
then slowly declines. The position of the maximum depends on the
ratio of carbon dioxide concentration in the gaseous phase to its
uniform concentration. Above 125 atm. the adsorption capacity re-
mains constant and independent of pressure. The plotted isotherms
satisfy von Antropoff's equation (Ref. 2: Koll. Z., 98, 249,(1942);
99, 35, 1942). It was found that data on the absolute absorption
of CO_2 at atm. pressure agree with those for the adsorption of CO_2
at partial pressures of up to 0.0021 atm. There are 2 tables, 5 fi-
gures and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The
reference to the English-language publication reads as follows: T.
Y. Webster (Iz materialov VIII Mezhdunarodnogo kongressa po kholo-

Card 2/3

Statics of the differential ...

31472
S/080/61/034/012/006/017
D243/D305

dil'nomu delu -Data from the 8th International Congress on Refrige-
ration) 25) The Effect of Indifferent Gases on the Vapor Pressure
of Carbon-Dioxide.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut kislo-
rodnogo mashinostroyeniya (All Union Scientific Re-
search Institute of Oxygen Machine Construction)
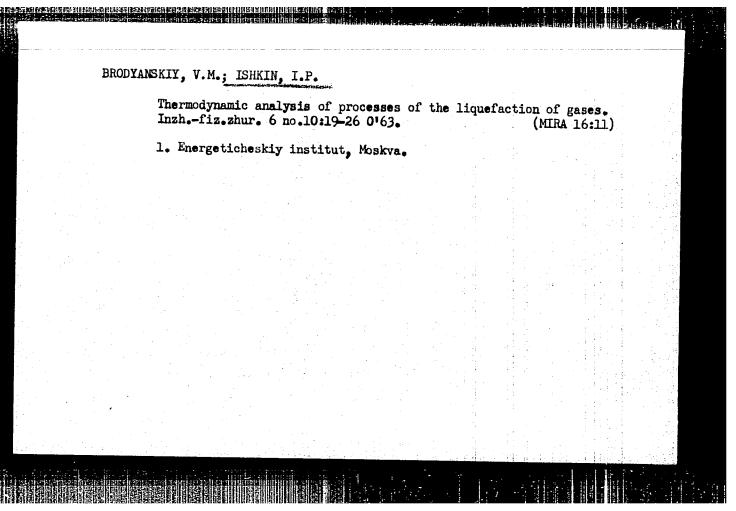
SUBMITTED: August 4, 1960

Card 3/3

ISHKIN, I.P.; KATINA, N.F.

Dynamics of carbon dioxide adsorption from mistures at atmospheric
and low pressures. Zhur.prikl.khim. 35 no.1:104-111 Ja '62.
                                                    (MIRA 15:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kislorodnogo
mashinostroyeniya.
                  (Carbon dioxide)   (Adsorption)

BRODYANSKIY, V.M.; ISHKIN, I.P.

Thermodynamic analysis of processes of the liquefaction of gases.
Inzh.-fiz.zhur. 6 no.10:19-26 O'63. (MIRA 16:11)

1. Energeticheskiy institut, Moskva.

L 16334-65   EWG(j)/EWP(e)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b)   Pq-4/Pr-4/Ps-4
IJP(c)/RPL   JD/WW/JW/WB

ACCESSION NR: AP4049178   S/0314/64/000/005/0025/0026

AUTHOR: Rogovaya, I.A., (Candidate of technical sciences), Ishkin, I.P., (Doctor of technical sciences, Professor)

TITLE: Thermophysical properties of rock packing under the operating conditions of air fractionating apparatus regenerators

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 5, 1964, 25-26

TOPIC TAGS: air fractionation apparatus, regenerator rock packing, regenerator aluminum packing, packing thermophysical property, oxygen production, nitrogen production, air fractionation

ABSTRACT: It is now possible to obtain technically pure oxygen (99.2-99.5%) and nitrogen (99.95-99.998%) in units with regenerators having rock packing and heat exchangers instead of the previously used aluminum band packing. The present paper discusses the results of a study of the thermal and hydrodynamic properties of rocks, as well as melted basalt, and makes some recommendations for their applicationating apparatus packings The tests were made with natural crushed rock which had been passed through ball mills. The hydrodynamic properties were tested only in the case of smooth molten

Card 1/3

L 16334-65

ACCESSION NR: AP4049178

basalt, but the thermal conductivity and heat capacity were determined for basalt, quartz, quartzite and granite. The equivalent pore diameter serv d for evaluating the hydraulic resistance. The packing grain surface per unit volume of filled space was taken to be directly proportional to the free volume and inversely proportional to the equivalent pore diameter. The thermal conductivity was determined in a calorimeter with liquid oxygen. The quantity of oxygen evaporated in the calorimeter due to heat flow through the sample was measured by a rheometer and the temperature of the outer surface was measured by a thermocouple. The thermal conductivity of the packing was determined by pouring the crushed rock between two concentric copper spheres. The quantity of heat passing through the rock was then calculated from the power of the heater. The heat capacity was tested by cooling a sample of material in a thermostat to a certain temperature, then placing the rock in a copper calorimeter having a certain temperature. The calorimeter temperature dropped and the heat capacity was calculated from the quantity of heat passing from the calorimeter to the sample. Comparison of the data obtained indicated that the thermal conductivity of a solid lump is 10 times higher than for crushed stone. Quartzite has the highest heat capacity, being the best packing for this reason, but the quarried quartzite is not as good as basalt and cannot be used in large regenerators.

Card 2/3

L 16334-65

ACCESSION NR: AP4049178   S/0314/64/000/004/0025/0026

Tests showed that replacement of corrugated aluminum packing by rock increases the regenerator cross section and lowers the air velocity. Decreasing the transfer time also lowers air losses from 3.5 to 1.3% and increases oxygen delivery from 96 to 98%. Lowering the air velocity leads to a content of only 5-7 p.p.m. of carbon dioxide. Checking the coefficient of application of the rock packing of the BR-1 appliance shown that increasing the transfer time 4 7 fold leads to negligible temperature gradients in the rock grain. Orig. art. has: 5 tables and 2 equations.

ASSOCIATION: none

SUBMITTED: 00   ENCL: 00   SUB CODE: IE, QC
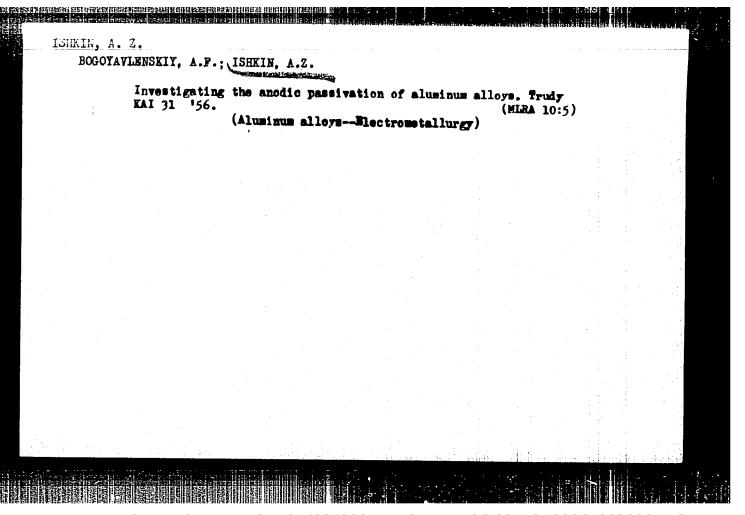
NO REF SOV: 005   OTHER: 004

Card 3/3

ISHKIN, I.F.; DUBIL', Ye.S.

Hydrodynamics of granular materials for soda production in a
fluidized bed. Zhur. prikl. khim. 38 no.1:107-114 Ja '65.
(MIRA 18:3)

ISHKIN, A. Z.

BOGOYAVLENSKIY, A.F.; ISHKIN, A.Z.

Investigating the anodic passivation of aluminum alloys. Trudy
KAI 31 '56.   (MLRA 10:5)

(Aluminum alloys--Electrometallurgy)

CHIRKIN, O., inzh.; KUZ'MIN, V.; BORISOV, L.; ISHKIN, V.; SEREBRYANNIKOV, G.

Information. Avt.transp. 42 no.12:52-54 D '64.

(MIRA 18:4)

28446

S/153/61/004/004/011/013
E141/E135

//. 0/32

AUTHORS: Sokolova, Ye.B., Shebanova, M.P., and Ishkina, V.I.

TITLE: Alkylation of toluene with crude isooctene

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
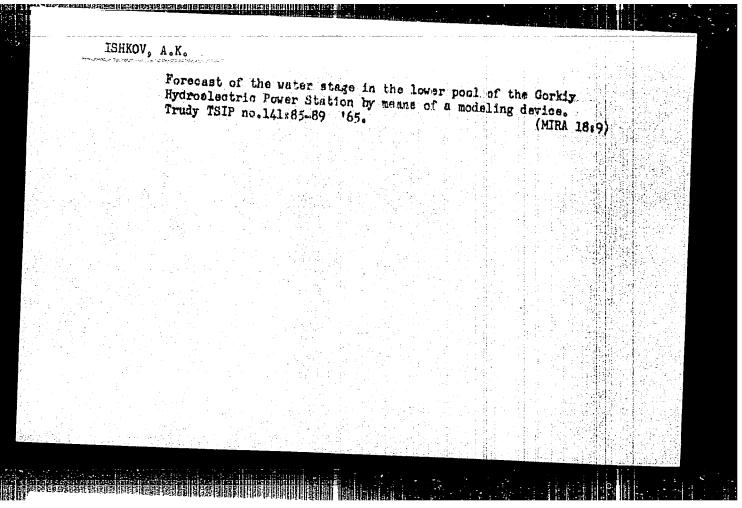   khimicheskaya tekhnologiya, vol.4, no.4, 1961, 657-660

TEXT: The authors attempted to synthesize the n-dialkyl-
substituted $C_{15}H_{30}$ cyclohexane, a possible component of hydrocarbon
fuels. Toluene and isooctene were used as starting materials.
2,4,4-trimethylpentene-1 and 2,4,4-trimethylpentene-2, the
isomeric forms of the isobutylene dimer (Ref.1: A.D. Petrov,
Khimiya motornogo topliva (Chemistry of motor fuel) Izd. AN SSSR,
1953, p.101) were obtained from crude isooctene by threefold
distillation. Crude isooctene contains a considerable fraction
(5 weight %) which boils at a temperature up to 101 °C; this
fraction was distilled on a 1100 mm high column. The fraction
boiling between 99 and 102 °C (constituting about 7 weight %) was
also used as alkylating agent. The alkylation reaction was carried
out according to the Friedel-Crafts reaction, in the presence of
$AlCl_3$, under reaction conditions as described by Sanford

Card 1/2

1. A. K. ISHKNELI

2. USSR (600)

4. Barium Titanate

7. Dielectric properties of isomorphous mixtures of barium titanate. Soob. AN
   Gruz. SSR 11 no. 5. 1950.

9. Monthly List of Russian Accessions, Library of Congress, ___April___ 1953, Uncl.

BUTOMA, B.Ye.; YEGOROV, M.Ye.; DEREVYANKO, Yu.G.; KHABAKHPASHEV, A.A.;
BAKAYEV, V.G.; ISHKOV, A.A.; KOLESNICHENKO, N.S.; KAMENTSEV, V.M.;
GORSHKOV, S.G.; KASATONOV, M.A.; ISHCHENKOV, N.V.; AFANAS'YEV, S.A.;
TITOV, G.A.; LARIONOV, M.F.

Boris Evgen'evich Klopotov; obituary. Sudostroenie 30
no.11:81 '64.

(MIRA 18:3)

ISHKOV, A.K.

Forecast of the water stage in the lower pool of the Gorkiy Hydroelectric Power Station by means of a modeling device. Trudy TSIP no.141:85-89 '65.

(MIRA 18:9)

ACC NR: AP7005707

AUTHOR: Vorob'yev, A. A.; Didenko, A. N.; Ishkov, A. P.; Kolomenskiy, A. A.; Lebedev, A. N.; Yushkov, Yu. G.

ORG: none

TITLE: Investigation of autoresonant method of particle acceleration by electromagnetic waves

SOURCE: Atomnaya energiya, v. 22, no. 1, 1967, 3-6

TOPIC TAGS: particle acceleration, magnetic resonance, ACCELERATION electron accelerator, ELECTROMAGNETIC WAVE, electron waveguide,

ABSTRACT: This is a continuation of earlier work (in: Trudy Mezhdunarodnoy konferentsii po uskoritelyam [Trans. Internat. Conf. on Accelerators] (Dubna, 1963), M., Atomizdat, 1964, p. 1030, and earlier papers) which demonstrated the feasibility of resonant acceleration of particles by a transverse wave in a longitudinal magnetic field under suitable conditions. The present paper contains the results of an experimental investigation of this method of acceleration. In view of the limited possibility of obtaining the required strong field in a large volume, the study is confined to acceleration by 10-cm electromagnetic waves inside a straight smooth waveguide (H_{11} and H_{10} modes). Equations are derived for the angular velocity and phase of a particle accelerated in such a structure, and for the length of the waveguide over which the particle energy will increase. The accelerating system was a

Card   1/2

UDC: 621.384.62

ACC NR: AP7005707

rectangular waveguide (72 x 44 mm) for the H_{10} mode or a 76-mm diameter round waveguide for the H_{11} mode. The length of the waveguide ranged from 150 to 1000 mm. Pulsed microwave power (not more than 600 kw) (3000 MHz) was fed in 3-μsec pulses at a repetition frequency of 50 Hz. The 1000-oe dc field was produced with a solenoid. The particle energy was determined from the deceleration produced by aluminum foils and reached 700 kev, at an electric field intensity of $3-5$ kv/cm, which is higher than obtainable by ordinary cyclotron acceleration. The ancillary tests made on the equipment are briefly described. The experimental data agree with the earlier theoretical predictions and it is concluded that the autoresonant mechanism can be used for effective injection of particles into magnetic traps. Orig. art. has: 1 figure and 9 formulas. [02]

SUB CODE: 20/   SUBM DATE: 05Sep66/   ORIG REF: 006/ ATD PRESS: 5117

Card 2/2

ARKHANGORODSKIY, L.A.; BUKSHTEYN, Ya.A.; VOROB'YEV, S.V.; GAYENKO,
P.A.; DOLGOV, Ye.N.; ZHIGLIN, A.A.; ZUBOVSKIY, G.P.;
ISHKOV, I.G.; KRYZHANOVSKAYA, G.L.; LISTRATOV, A.A.; LUR'YE,
R.I.; MOROZOV, N.P.; OSTROZETSER, A.S.; PAVLOV, N.A.;PETROV,
L.M.; POPOV, V.N.; TARTAKOVSKIY. M.A.; TAUBE, D.N.; KHANIN,
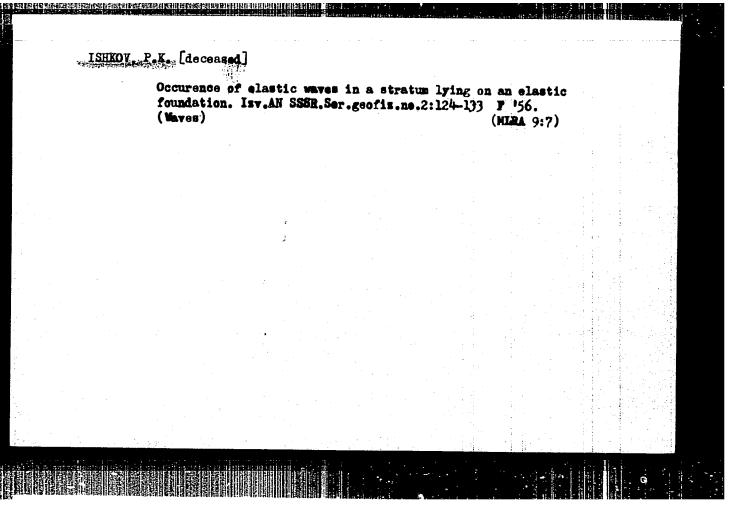L.T.; SHAPIRO, TS.S.; SHVAYTSBURG,B.A.; SHEVTSOV, V.D.;
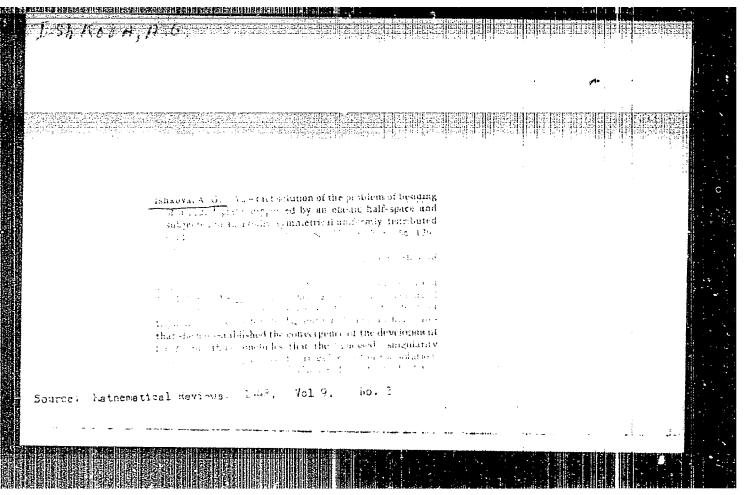DENISENKOVA, L.M., red.

[Assembler's handbook on performing mechanical assembly and
special work on grain elevators and grain processing enter-
prises] Spravochnik montazhnika; po proizvodstvu mekhano-
montazhnykh i spetsial'nykh rabot na elevatorakh i predpri-
iatiiakh po pererabotke zerna. Moskva, TSentr. in-t
nauchno-tekhn. informatsii i tekhniko-ekon. issl., 1963. 519 p.
(MIRA 17:7)

ISHKOV, M.

    An engineer is in constant search for progress. Mest.prom.i khud.
promys. 2 no.8:16-17 Ag '61.   (MIRA 14:9)

1. Glavnyy inzhener oblmestproma, Grodno, Belorusskoy SSR.
               (Industrial management)

ISHKOV, P.K. [deceased]

Occurence of elastic waves in a stratum lying on an elastic
foundation. Izv.AN SSSR.Ser.geofiz.no.2:124-133 F '56.
(Waves)   (MIRA 9:7)

Ishkova, A. G.   Exact solution of the problem of bending of a plate supported by an elastic half-space and subjected to a radially symmetrical uniformly distributed ... So. 12...

... that she has established the correspondence of the development ... it is remarkable that the "stressed" singularity ...

Tskova, A. G.: Bending of a circular plate lying on an elastic half-space under the action of an axially symmetrical uniformly distributed load. Moskov. Gos. Univ. Učenye Zapiski 152, Mehanika 3, 202–215 (1951). (Russian)

The fourth order differential equation for the deflection of the plate with free edges described in the title, which was given by Lagrange and S. Germain, and the integral equation for the sag of the foundation which was given by Boussinesq and Schleicher, together with the boundary conditions contain the solution of the problem. The unknown reaction of the foundation present in both equations makes it very difficult to find the exact solution. The problem was tackled before by Borovik and Gorbunov-Posadov (references not given). They assumed the reaction to be a power series in radius vector r, and the problem was reduced to an infinite system of equations determining the coefficients of the series. The system was not solved, but the first few coefficients were approximately determined.

The author of this paper assumes also that the reaction is a power series in r but of a very special form. She also obtains the infinite system of equations in coefficients of the series and manages very ingeniously to solve it. The solutions, i.e., the coefficients, are infinite series themselves. The solutions are checked and the series representing the reaction is tested for convergence.   T. Laur.

ISHKOVA, A. G., and TULAYKOV, A. N.

"Some Problems on the Flexure of Plates Lying on an Elastic Sem-
ispace," by A. G. Ishkova and A. N. Tulaykov, Moscow, Inzhenernyy
Sbornik, Vol 23, 1956, pp 47-62, submitted for publication 12
Jun 54

This work studies problems of the flexure of an infinite strip under
the conditions of a plane problem and a circular plate with different
loadings, lying on ground assumed to be an elastic, isotropic, homogeneous
semispace. Nonsymmetric and concentrated loads are not considered. The
problem in question was boiled down to the determination of the reaction
of the ground to the plate with the plate being in equilibrium under the
action of external loads and reactive pressures and with the plate being
in solid contact with the ground at every point.

Sum 1239

_/ · ·il i\ r· v H // (-

AUTHOR: Ishkova, A.G. (Moscow)   40-21-2-19/22

TITLE: Some Generalizations for the Solution of the Problems on the
Deformation of a Round Plate and an Infinite Strip Which Lie
on an Elastic Half Space (Nekotoryye obobshcheniya, kasayushch-
iyesya resheniya zadach ob izgibe krugloy plastinki i
beskonechnoy polosy, lezhashchikh na uprugom poluprostranstve)

ABSTRACT: The author considers the deformation of a round plate and a
strip during the influence of a shunt loading (axialsymmetric-
al one or not) and during a simultaneous shunt loading and
compression (in the plane of the plate or of the strip). The
solutions are sought in the form of infinite series. Several
examples are calculated. Similar methods have been proposed
by the author in an earlier paper [Ref 5]. There are 6 Soviet
references.

SUBMITTED: November 5, 1956

AVAILABLE: Library of Congress

Card 1/1   1. Plates--Deformations--Theory

AUTHOR: Ishkova, A.G. (Moscow)   SOV/24-58-5-13/31

TITLE: Bending of a Circular Plate Located on an Elastic
            Semi-space under the Effect of a Load which is not
            Axis Symmetrical (Izgib krugloy plastinki, lezhashchey
            na uprugom poluprostranstve, pod deystviyem nekotoroy
            neosesimmetrichnoy nagruzki)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh
            Nauk, 1958, Nr 5, pp 78-84 (USSR)

ABSTRACT: The bending is considered of a circular plate by a load
            which is not axis symmetrical and varies according to
            the law $q^{*} = q(\rho) \cos n \Theta$, the plate being placed on
            the soil, which is assumed as being an isotropic, elastic,
            uniform semi-space. The problem under consideration is
            reduced to determining the reaction of the ground on the
            plate under conditions of the external load and the
            reaction pressures being in equilibrium and the plate
            adhering tightly to the ground at each point. For the
            same conditions the author of this paper solved some
            axis-symmetrical and plane problems in earlier work
            (Refs 1 and 2). It is assumed that $q(\rho)$ can be developed
Card 1/2   into a power series which is convergent inside a circle.

· Bending of a Circular Plate Located on an Elastic Semi-space
under the Effect of a Load which is not Axis Symmetrical

      Relations are derived, the use of which is illustrated
      by means of an example.
      There are 1 table and 5 references, 4 of which are
      Soviet, 1 German.

SUBMITTED: September 26, 1957

Card 2/2

AUTHOR: __Ishkova, A.G.__   SOV/140-58-6-10/27

TITLE: The Problem of Bending of a Round Plate Resting on an Elastic
         Half Space, Under the Influence of a Single Force Acting in the
         Center (Zadacha ob izgibe krugloy plastinki, lezhashchey na
         uprugom poluprostranstve, pod deystviyem sosredotochennoy sily,
         prilozhennoy v yeye tsentre)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, Nr 6,
         pp 96-104 (USSR)

ABSTRACT: The author considers the bending of a round plate of radius 1,
         resting on an elastic base which is charged by a single force
         in the center. The unknown radius force of the base is sought
         in the form

$$p(s) = \frac{A}{\sqrt{1-s^2}} + \sum_{n=0}^{\infty} b_n s^n + \sum_{n=0}^{\infty} E_{2n} s^{2n} \ln s.$$

         By separation of the singularity $(1-s^2)^{-1/2}$ the author succeeds
         in obtaining a rigorously solvable infinite system of equations
         for the determination of the coefficients. The solutions are
         compared with formerly obtained approximate solutions; there are
         relatively small differences.
         There are 6 references, 4 of which are Soviet, and 2 German.

Card 1/2

The Problem of Bending of a Round Plate Resting on an   SOV/140-58-6-10/27
Elastic Half Space, Under the Influence of a Single
Force Acting in the Center

ASSOCIATION: Moskovskiy aviatsionnyy institut imeni Ordzhonikidze
            (Moscow Aviation Institute imeni Ordzhonikidze)

SUBMITTED: October 24, 1957

Card 2/2

SOV/24-58-10-13/34

AUTHOR: Ishkova, A. G. (Moscow)

TITLE: On the Bending of a Circular Plate and Infinite Strip Lying on an Elastic Half-Space (Ob izgibe krugloy plastinki i beskonechnoy polosy, lezhashchikh na uprugom poluprostranstve)

ABSTRACT: Solutions of problems on the bending of a circular plate and of an infinite strip placed on an elastic half-space and loaded in various ways may lead to the solution of some infinite systems of equations with infinite numbers of unknowns. In each problem one must find unknown coefficients $\alpha_{\mu n}$ which satisfy the following infinite family of infinite systems of equations:

$$\sum_{n=0}^{\infty} \frac{\alpha_{\mu n}}{2n - 2m - 1} = \beta_{\mu m} \quad \begin{pmatrix} \mu = 1, 2, \ldots \\ m = 0, 1, \ldots \end{pmatrix} \quad (1)$$

The solution of such systems may be represented in the form:
Card 1/2

SOV/24-58-10-13/34

On the Bending of a Circular Plate and Infinite Strip Lying on an Elastic Half-Space

$$\alpha_{\mu n} = \frac{2}{\pi} \frac{(2n-1)!!}{(2n)!!} \sum_{s=0}^{\infty} \frac{(2s+1)!!\beta_{\mu s}}{(2s)!!(2n-2s-1)} \qquad . \qquad (2)$$
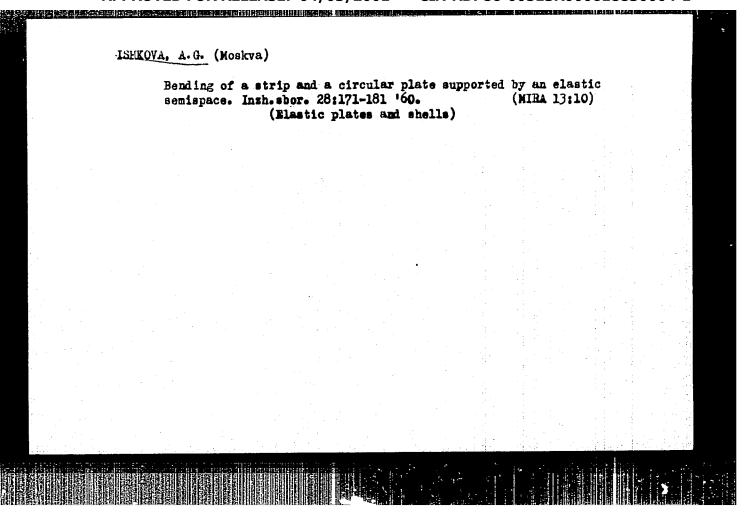
The fact that Eq.(2) is a solution of Eq.(1) may be verified by a simple substitution as was shown by the present author in Ref.1. In the present paper it is shown how this solution was found. There are no figures; 4 Soviet references by the present author.

SUBMITTED: November 27, 1957.

Card 2/2

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(Acad of Sci USSR. Inst of Mechanics), 150 copies. Bibliography:

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Bending of a strip and a circular plate supported by an elastic
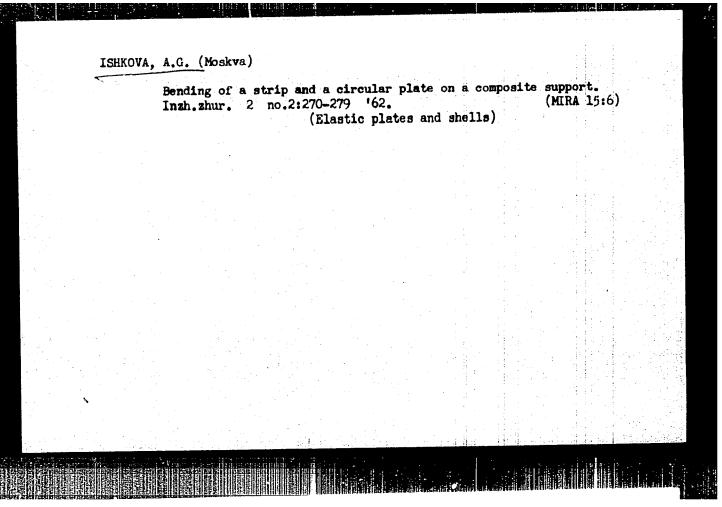semispace. Inzh.sbor. 28:171-181 '60.   (MIRA 13:10)
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1. Moskovskiy aviatsionnyy institut imeni Ordzhonikidze.
            (Elastic plates and shells)

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(Elastic plates and shells)

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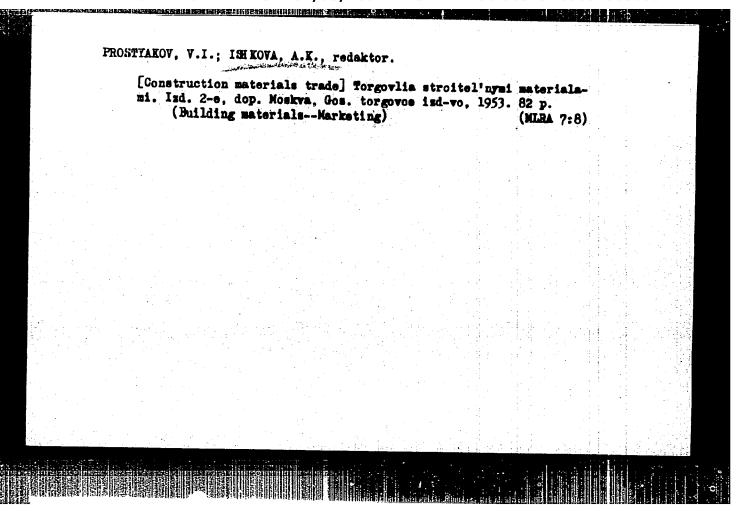and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

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mi. Izd. 2-e, dop. Moskva, Gos. torgovoe izd-vo, 1953. 82 p.
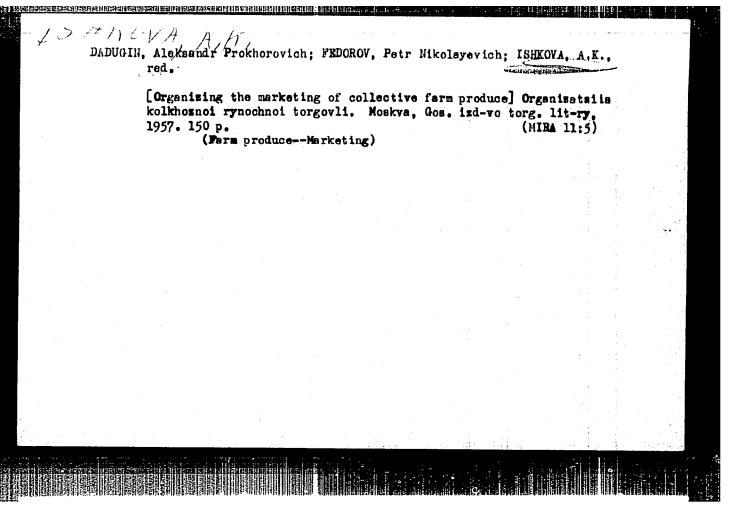(Building materials--Marketing)   (MLRA 7:8)

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     [A catalog of commercial and technical equipment] Spravochnik-
     katalog torgovogo i tekhnologicheskogo oborudovaniia. Izd. 2-e.
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sudarstvennoi torgovle; sbornik rukovodiashchikh materialov. Izd.2.,
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1961. 335 p.   (MIRA 14:11)
                    (Wages—Commerce)

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AUTHORS: Ivanov, S.I., Shalinets, B.A., Myshlyayev, A.M.   47-6-36/37

TITLE: A Conference on the Method of Teaching Physics(Konferentsiya po metodike fiziki)

PERIODICAL: Fizika v Shkole, 1957, # 6, page 93 (USSR)

ABSTRACT: A scientific conference on the method of teaching physics took place at the Moskva Oblast' Pedagogical Institute with teachers from the city of Moscow and the Moscow Oblast' and representatives of the Moscow, Stalingrad, Krasnodar, Mariyskiy [in Yoshkar-Ola], Kabardino-Balkarskiy, Tula, Yaroslavl,

Berdichev, and Shuya pedagogical institutes, the Institut of Psychology APN and the Kaluga Oblast' Institute for the Improvement of Teachers.
                   The following reports were heard and discussed: S.I. Ivanov - "The Methods of Methodical Researches", O.N.Lapina - "The Rise and Development of Concepts of Temperature and Quantity of Heat" (at the 7-class school), Ye.Kh. Lyatker - "The Rise and Development (at the pre-school age and the 7-class school) of Basic Concepts in the Field of Electricity", T. Ya. Ishkova - "The Rise and Development (during the pre-school age and at the 7-class school) of Concepts

Card 1/2   of Magnetism", A.V. Selenginskiy - "On the Development of

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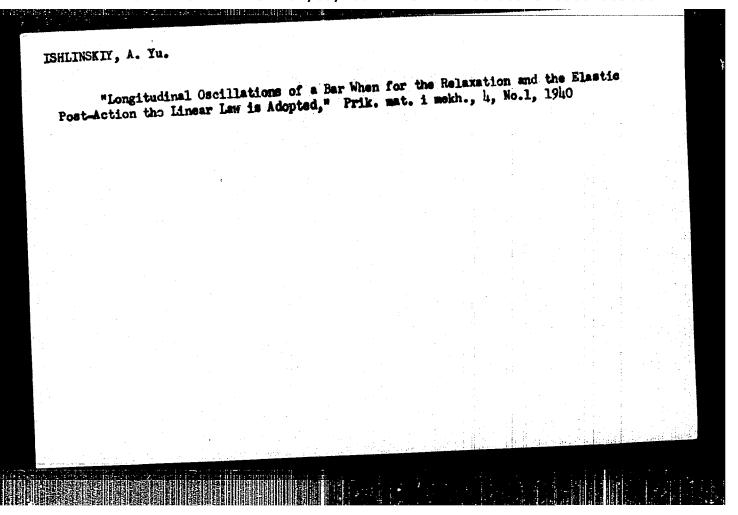
KUCHERENKO, M.T.; ISHKOVA, Ye.V.

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