POVILAYTIS, M.M.

"Lodochnikit," absjte, and "torutit," new minerals. Zap.Vses.min.ob-va
no.1:113-123 '63.   (MIRA 16:4)

1. Institut geologii rudnykh mestorozhdeniy petrografii, mineralogii i
geokhimii AN SSSR, Moskva.
                              (Minerals)

POVILAYTIS, M.M.; ORGANOVA, N.I.

Composition and properties of micas. Trudy Min. muz. no.14:
140-165 '63.   (MIRA 16:10)

(Mica)

POVILAYTIS, M.M.

History of the formation of the Kuu granite massif in central
Kazakhstan and tungsten mineralization associated with it.
Geol. rud. mestorozh. 6 no.5:40-56 S-O '64.   (MIRA 17:12)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii AN SSSR, Moskva.

POVILAYTIS, Margarita Maksimovna; BONSHTEDT-KUPLETSKAYA, E.M.; SHLEPOV,
V.K., red.izd-va; MAKUNI, Ye.V., tekhn.red.

[Basic mineralogical characteristics of the Dzhida molybednum-
tungsten deposit] Osnovnye cherty mineralogii dzhidinskogo
molibdeno-vol'-framovogo mestorozhdeniia. Moskva, Izd-vo Akad.
nauk SSSR, 1960. 166p. (Akademiia nauk SSSR. Institut geologii
rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii.
Trudy, no.24)   (MIRA 13:6)
              (Dzhida Range--Molybdenum ores)
              (Dzhida Range--Tungsten ores)

POVILAYNEN, M.M., inzh.

      Resources for prolonging the life of fluorescent lamps. Mekh. i
      elek. sots. sel'khoz. 17 no.1:38-39 '59.   (MIRA 12:1)

      1.Altayskiy sel'skokhozyaystvennyy institut.
              (Fluorescent lamps)

POVILAYTIS, M.M. [Povilaitis, M.M.]

New data on granitoid bodies having rhythmically zonal structures.
Geol.rud.mestorozh. no.5:37-52 S-O '61.   (MIRA 14:9)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii AN SSSR, Moskva.
                    (Rocks)

}

POVILAYTIS, M. M.

Relation of mineralization to dikes as one of the criteria of the genetic relation of deposits to intrusions. (With an example of the ...

... Sci. U.S.S.R., Moscow). Izvest. Akad. Nauk ...

... Mo-W deposit ... relation of basic compn. are discussed, with a comparison with other deposits ... are given.

POVILAYTIS, M.M.

Feldspathization phenomena in ore deposits of the Kuu-granite massif (central Kazakhstan). Geol. rud. mestorozh. no.2:66-78 Mr-Ap '61.   (MIRA 14:5)

1. Institut geologii rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii AN SSSR.

                (Kazakhstan--Feldspar)

POVILAITIS, M.M.

Correlation of mineralization and dikes as one criterion of the
genetic association of ore deposits and intrusions, as in the
Dzhida deposit. Izv.AN SSSR.Ser.geol. 22 no.1:90-105 Ja '57.

(MLRA 10:3)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii AN SSSR, Moskva.
(Dzhida Valley--Ore deposits)

3 (8)
· AUTHORS: Ostrovskiy, I. A., Mishina, G. P.,   SOV/20-126-3-52/69
                  Povilaytis, V. M.

TITLE: The PT-projection of the Alumina-water System
                  (PT-proyektsiya sistemy kremnezem-voda)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 3,
                  pp 645-646 (USSR)

ABSTRACT: The system mentioned in the title is a limiting system for
                  many silicate systems with volatile components which are of
                  importance in petrology and mineralogy. At least 5 phases exist
                  in this binary system at high temperatures: cristobalite,
                  tridymite, quartz, liquid and vapor. It is (according to
                  Ref 1) a multiple system with one degree of freedom.
                  In general, such system must have 5 invariant points and 10
                  monovariant lines. The present case is simplified by the
                  circumstance that all crystalline phases are of the same
                  chemical composition, and only the monovariant reactions
                  (1)-(6) are possible between the phases. In the reactions
                  (4)-(6) the liquid and gaseous phases do not take part, so that
                  the equilibriums are degenerated. This simplifies very much
Card 1/3   the building-up of a basic scheme for the system mentioned in

The PT-projection of the Alumina-water System   SOV/20-126-3-52/69

the title (Fig 1). All 3-phase monovariant equilibriums are
stable in this scheme. This is in agreement with the experiment.
In the present case, the degenerated equilibriums are stable
on both sides of the invariant points. The corresponding
curves pass over into one another without changing their
directions. The variant, in which the equilibrium tridymite +
+ gas = melt is unstable, is excluded from consideration. An
experiment, however, makes it easily clear that tridymite
can coexist with the melt. As the experimental PT-diagram of
the mentioned system (Ref 2) is incomplete, and does not agree
with the theoretical scheme (Fig 1), the authors achieved
some precision and completion by their experiments. The
resulting experimental PT-diagram corresponds to the
theoretical scheme (Fig 1). Figure 2 shows this experimental
diagram (Refs 3, 4). A comparison of this diagram with the
material found by other investigators shows differences in
the position of various points and lines. There are 2 figures
and 4 references, 1 of which is Soviet.

Card 2/3

The PT-projection of the Alumina-water System   SOV/20-126-3-52/69

ASSOCIATION: Institut geologii rudnykh mestorozhdeniy, petrografii,
                 mineralogii i geokhimii (Institute for the Geology of Ore
                 Deposits, Petrography, Mineralogy and Geochemistry)

PRESENTED: March 30, 1959, by D. S. Korzhinskiy, Academician

SUBMITTED: March 28, 1959

Card 3/3

PCVILAYTIS, V.V., Cand Bio Sci--(diss) "Uninoctology of badel..te of

cattle in the Lithuanian SSR. Vil'nyus, 1958. 22 pp with schematic drawings.

(Min of Higher Education USSR. Vil'nyus St U im V. Kapsukas), 100 copies

(KL, 26-58, 107)

POVILEYKO, R.P.

     Promoting aesthetics in work. Mashinostroitel' no.8:21 Ag
     '65.   (MIRA 18:11)

FOVILEYKO, Ryurik Petrovich

[Controls and tools; experimental lecture to students
majoring in design in the faculties of Mechanical
Engineering and Instrument Manufacture of the Novosibirsk
Electrical Engineering Institute] Organy upravleniia i
instrument; eksperimental'naia lektsiia dlia studentov
konstruktorskikh spetsial'nostei mashinostroitel'nogo i
priborostroitel'nykh fakul'tetov Novosibirskogo elektro-
tekhnicheskogo instituta. Novosibirsk, Elektrotekhn. in-t,
1965.   88 p.   (MIRA 18:12)

MESKAUSKAS, K.; PUROMAS, V.; POVILIUMAS, A.; MALISAUSKAS, V.;
    JANUSKEVICIUS, V.; BERKAMNAS, E.; KRUTULYS, V., spets. red.;
    POLUIKIS, J., spets. red.; CIMBOLENKA, P., red.; ANAITIS, J.,
    tekhn. red.

    [Twentry years of the Soviet Lithuanian national economy] 20
    metu Tarybu Lietuvos liaudies ukiui. Vilnius, Valstybine
    politines ir mokslines literaturos leidykla, 1960. 315 p.
                                          (MIRA 15:6)
    1. Lietuvos TSR Mokslu akademija, Vilna. Ekonomikos institutas.
        (Lithuania—Economic conditions)

POSKUS, Balys; MALISAUSKAS, V., otv. red.; MESKAUSKAS, K.,red.;
POVILIUNAS, A., red.; MONTRIMAS, J., red.; CECYTE, V.,
tekhn. red.

[Lowering costs on collective farms] Savikainos mazinimas
kolukiuose. Vilnius, Valstybine politines ir mokslines
literaturos leidykla, 1961. 106 p.   (MIRA 15L3)
(Lithuania--Collective farms)

GUDELIS, V., POVILONIS, S.

Craniology

Skull of a fossil man.   Priroda 41, no. 4, 1952.

9. **Monthly List of Russian Accessions**, Library of Congress, _____ 1953. Unclassified.

MISHCHENKO, P.I.; POVINSKAYA, A.I. [deceased]

Diuretic effect of promeran; preliminary communication. Sov.med.
23 no.12:99-104 D '59.   (MIRA 13:4)

1. Iz kliniki propedevtiki vnutrennikh bolezney (zaveduyushchiy -
prof. A.M. Damir) II Moskovskogo meditsinskogo instituta imeni
N.I. Pirogova.
             (DIURETICS MERCURIAL ther.)

POVIRAYEV, N. P., Cand Med Sci -- "Sources of ~~the~~ innerva-
tion and topographic ₐanatomical position of the cardiac
nerves." Tomsk, 1961. (Novosibirsk Med Inst) (KL, S-61,
263)

- 505 -

POVITSKAYA, R. S.

Povitskaya, R. S. - "On the relationship of the psychopathological symptoms, syn-
dromes and psychoses of clinical patients with closed trauma of the brain," Trudy
Tsentr. in-ta psikhiatrii, Vol. IV, 1949, p. 58-70

SO: U-4934, 29 Oct 53, (Letopis 'Zhurnal 'nykh Statey, No. 16, 1949).

BANSHCHIKOV, V.M., zasl. deyatel' nauki prof., red.; AKYHV., N.B.,
        red; ZAIKAIN.B, A.K., doktor med. nauk, red.; KABANOVL, Ye.S.,
        prof., red.; LOVITSKAYA, K.B., kondit med. nauk, red.;
        ROKHLIN, L.L., prof., red.; SNEGIREV, I.I., red.

[Collection of scientific works dedicated to the 150'th an-
niversary of the Hospital] Sbornik nauchnykh trudov, posvia-
shchennyi 150-letiiu bol'nitsy. Pod obshchei red. V.M.
Banshchikova i N.N.Krylovoi. Moskva, 1963.   487 p.
                                        (MIRA 17:7)
1. Moscow. Psikhonevrologicheskaya gorodskaya bol'nitsa No.3.

POVITSKII, A. S.

1. Udar pri posadke gidrosamoleta. II. O maksimal'nykh dav-
leniiakh na dnishche s vognutymi uchastkami. III. Dopolneie k rabote
Vagnera po udaru i glissirovaniiu. Moskva, 1935. 31 p., diagrs.
(TSAGI. Trudy, no. 199)
    Title tr.: I. Impact of a seaplane at landing. II. Maximum
pressures on the partly concave bottom of a seaplane. III. Addendum
to Wagner's paper on the problem of impact and gliding of seaplanes.

QA911.U6G no. 199

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of
    Congress, 1955.

POVITSKII, A. S.

Posadka gidrosamoletov. Moskva, 1939. 83 p., plates, diagrs.
(TSAGI. Trudy, no. 423)
Bibliography: p. 83.
Title tr.: Landing of water-borne aircraft.

QA911.M65 No. 423

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of
Congress, 1955.

SOV/147-58-4-5/15

AUTHOR: Povitskiy, A. S.

TITLE: Oscillations of an Elastic Plate in Liquids (Kolebaniya
          uprugoy plastinki v zhidkosti)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya
          tekhnika, 1958, Nr 4, pp 30-35 (USSR)

ABSTRACT: The two-dimensional problem of an oscillating elastic
          plate is discussed, the plate being either of a constant
          or of a variable thickness and in contact with the free
          surface of the ideal liquid (the case of a submerged
          plate may be obtained from the above by a duplication of
          the corresponding coefficient). Only free natural
          frequencies are considered, and especially the first mode
          of oscillation. In accordance with the Hamilton Principle,
          the motion of the system consisting of the plate and the
          liquid proceeds in such a way that the integral of Eq (1)
          has a stationary value (where T is the kinetic energy of
          the system and U is its potential energy). Denoting by
          T_1, the energy of the plate and by T_2 the energy of the
          liquid and taking the origin of the coordinates at the
          centre of the plate (of a width $2a$), the integral
          relations for T_1, T_2 and U are obtained as shown on p 31,

Card 1/4

Oscillations of an Elastic Plate in Liquids   SOV/147-58-4-5/15

where:

$u(x,t)$ - deformation of the plate,

$\varphi(x,y,t)$ -- velocity potential of the liquid due to
         oscillating plate,

ρ_1 - density of the plate (in general $\rho_1 = \rho_1(x)$

ρ - density of the fluid,

h - thickness of the plate (in general $h = h(x)$,

E - Young Modulus.

I - Second moment of the area (in general $I = I(x)$,

S and n -- contour bounding the expanse of liquid and the
         normal to it respectively.

Dots denote time derivatives and dashes axial derivatives.
As shown in Ref 1, Eqs (2) give relations between the
velocity potential φ and the deformation of the plate u,
where γ_1 and γ_2 are some constants determined from
conditions $\varphi = 0$ at $y = 0$, $|x| > a$, and from the
circulation around the plate.   For purely periodic motion
of frequency ω, Eq (4) holds true, hence by Eqs (4) and (2)
Card 2/4 we get Eq (5). Taking now the time interval $t - t_0$ equal

Oscillations of an Elastic Plate in Liquids   SOV/147-58-4-5/15

to the period $\frac{2\pi}{\omega}$, by Eq (1) relations (6) and (7) are derived from which, since $\delta L = 0$, there follow n - linear homogeneous equations of the type:

$$\frac{\partial L}{\partial b_k} = 0.$$

The roots of these equations give the approximate values of the frequencies of the system. The author then considers in some detail the case with the symmetric boundary conditions when X_k is a polynomial of the fourth order and gives the results in the form of a table on p 34. Column one gives the type of the end fixing of the plate, column two - the polynomial X_o (in all these cases $b_1 = b_2 = \ldots = b_n = 0$ only $b_o \neq 0$ hence there is only X_o); column three gives the boundary conditions and column four the circular frequency ω^2; k is the elasticity of the supports (no rotation is possible). (There is a misprint in this article: the formula at the top of p 35 should be at the bottom of the column 4 of the Table on p 34).

Card 3/4   It is seen from the Table that the effect of the fluid

Oscillations of an Elastic Plate in Liquids   SOV/147-58-4-5/15

exhibits itself by an additional term which can be
interpreted simply as an additional mass attached to the
plate; the magnitude of this additional mass (μ) depends
upon the type of end fixing of the plate so that the
effective mass (the sum of the mass of the plate   m   and
the additional mass μ) also varies with the type of the
end fixing. From the last formula of column 4, one can
obtain the value of the circular frequency of the axial
oscillations by putting EI $\rightarrow \infty$,
There are 1 table and 1 Soviet reference.

ASSOCIATION: Kafedra Aeromekhaniki samoleta (Chair of Aeromechanics
of Aeroplanes) Moskovskiy aviatsionnyy institut
(Moscow Institute of Aeronautics)

SUBMITTED: February 18, 1958

Card 4/4

69315

S/147/60/000/01/004/018
E031/E535

10.7000

AUTHOR: Povitskiy, A.S.

TITLE: The Equilibrium Temperature of Slender Bodies in
            Supersonic Flow

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya
            tekhnika, 1960, Nr 1, pp 35-42 (USSR)

ABSTRACT: In this paper the corrections are discussed which must
            be made to the heat transfer coefficients of a flat
            plate in order to apply them to thin wedges and cones
            at high supersonic velocities. First of all, an
            approximation is introduced for the heat transfer
            coefficient of a flat plate. From this the effect of
            the shape of the body on the heat flow can be expressed
            in the form of a factor. The expression obtained for
            the heat flow is used to reduce the determination of the
            equilibrium temperature to a single graph, which is
            given in the paper. It is assumed that for slender
            bodies the effect of compressibility on heat transfer
Card 1/6   is expressed by the variation of the density and viscosity

69315

S/147/60/000/01/004/018
E031/E535

The Equilibrium Temperature of Slender Bodies in Supersonic Flow

in the boundary layer, neglecting the effect of
compressibility on the structure of the latter.   An
expression is found for the effect of Mach number on
the boundary layer and of a flat plate and this is
replaced by a simple empirical expression involving
the concept of equivalent temperature, which is a
linear combination of the wall temperature, the
temperature on the edge of the boundary layer and the
stagnation temperature. Both laminar and turbulent
boundary layers are considered and the weights in
the linear combinations differ in each case, both
being derived from experiment. The results obtained
so far are now applied to slender bodies, a wedge,
thin profile, slender cones and slender bodies of
revolution being specially considered. Finally, the
determination of the radiation equilibrium temperature
is discussed.   Starting with the approximate
expressions for the flat plate (Eqs 1 and 2), and

Card 2/6   assuming that the compressibility phenomena result $\cancel{}$

69315

S/147/60/000/01/004/018
E031/E535

The Equilibrium Temperature of Slender Bodies in Supersonic Flow

only in the change of density and velocity of the
gas inside the boundary layer (this is true in the
case of a flat plate everywhere, while for the slender
bodies it breaks down in the regions of strong
interaction between the shock wave and the boundary
layer, i.e. near the nose of the body), Eq (3) is
derived in which the expression in square brackets
denotes the effect of the Mach number M on the
boundary layer. Employing now the fact that pressure
across the boundary layer is constant and adopting the
approximate variation of viscosity with temperature,
Eq (4) is obtained. The effective temperature is the
function of the temperature of the wall (T_w),
stagnation temperature (T_r) and the temperature at the
outer edge of the boundary layer (T_6) as given by
Eq (5) in which a,b and c are some constants. (This
equation is equivalent to the corresponding relations
given by Karman, Tekker, Young, Rubezin and others).

Card 3/6   The constants are determined by applying Eqs (3) to (5)

69315

S/147/60/000/01/004/018
E031/E535

The Equilibrium Temperature of Slender Bodies in Supersonic Flow

to the flat plate and utilizing Eq (6). The experiments
and more accurate formulae (Ref 1) confirm that it may
be taken that a:b:c = 4:3:2.   In Fig 1 the graphs of
Eq (5) with the above values of a, b and c are compared
with the corresponding more exact relation based on
Karman's similarity principle (Ref 1), while Fig 2
relates the experimental data available with the
relation of Eq (6) and a similar relation of Ref 2.
Agreement is quite satisfactory. As seen from this
figure, even if it is assumed that a=b=c (full line
in the graph) the result does not differ much from the
experimental data. The above results apply to the case
of the boundary layer being turbulent; when the boundary
layer is laminar the coefficients will be a:b:c = 0.27:
0.55:0.18.   Hence the approximate coefficients of heat
transfer for the case of the flat plate are given by
Eq (7) when the boundary layer is turbulent and Eq (8)
when the boundary layer is laminar.   For the case of
Card 4/6   slender thin bodies (wedges, cones, profiles etc.),

69315

S/147/60/000/01/004/018

E031/E535

The Equilibrium Temperature of Slender Bodies in Supersonic Flow

with the turbulent boundary layer it is given by Eq (14) and when the boundary layer is laminar, Eq (15) holds. The graphs of these relations are shown in Figs 5 and 6 respectively, the ordinates in these graphs being as defined by Eqs (17) and (18), respectively.

There are 6 figures and 5 Soviet references (one is a translation of an English textbook).

ASSOCIATION: Kafedra aeromekhaniki samoleta, Moskovskiy aviatsionnyy institut (Chair of Aircraft Aeromechanics, Moscow Aviation Institute)

SUBMITTED: July 30, 1959

Card 6/6

SOV/5822

PHASE I BOOK EXPLOITATION

Alekseyev, Semen Mikhaylovich, Yakov Vladimirovich Balkind, Aleksandr Mironovich Gershkovich, Veniamin Semenovich Yeremin, Aleksandr Solomonovich Povitskiy, and Naum L'vovich Umanskiy

Sovremennyye sredstva avariynogo pokidaniya samoleta (Modern Facilities for the Emergency Abandonment of an Airplane) Moscow, Oborongiz, 1961. 450 p. Errata slip inserted. 4000 copies printed.

Reviewer: A. G. Brunov, Engineer; Ed.: A. I. Sokolov, Engineer; Ed. of Publishing House: A. G. Belevtseva; Tech. Ed.: P. V. Shcherbakov; Managing Ed.: S. D. Krasil'nikov.

PURPOSE: This book is intended for engineering and technical personnel in the aircraft industry, scientific workers, and flying and technical personnel of the Soviet Air Force.

COVERAGE: Based on non-Soviet sources, the book reviews briefly the development of flyers' escape equipment, describes the construction of ejection seats, and gives design and calculation

Card 1/12

⁓ilities for Air-   3

...ata for ejection seats and ejection-seat parachutes. Informa-tion is included on the calculation of the trajectory of the in-ejected seat, its stabilization, and the aerodynamic loads in-volved. Attention is given to methods of escaping from aircraft flying at high speeds and at high and low altitudes. Informa-tion on problems connected with oxygen equipment, protective clothing, and testing facilities is also included. The authors thank A. G. Brunov, P. D. Tkachev, and N. A. I. Aleksandrova, Engineers, for valuable sugges-tions; and N. A. I. Lobanov, Candidate of Technical Sciences, for writing Subheading 9 of Ch. III. There are 34 references; 31 Soviet (5 translations), and 3 English.

...lities (Cont.)

SOV/5822

TABLE OF CONTENTS:

POVITSKIY, A.S.; LYUBIN, L.Ya.

Emptying and filling vessels under weightlessness conditions.
Isk.sput.Zem. no.15:22-37 '63.   (MIRA 16:4)
               (Weightlessness)   (Hydrodynamics)

L 3924-66   FSS-2/EWT(1)/EWP(m)/ES(v)-3/EWA(d)/FCS(k)/EWA(1)   DD/RD   UR/0293/65/003/005/0718/0729

ACC NR: AP5026052   532.529.6

AUTHOR: Povitskiy, A. S.; Lyubin, L. Ye.

TITLE: Gas flow into a liquid under weightlessness conditions

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965, 718-729

TOPIC TAGS: hydrodynamics, gas flow, axial flow, weightlessness

ABSTRACT: The effect of near-zero and zero gravity on the process of bubble formation (bubbling process) in a flow of gas injected into a liquid through a tube is considered. Flows of gas into stationary and moving liquids are analyzed for various values of Bond and Weber numbers under conditions of weightlessness. Conditions are established under which the bubbles may break away from the tube. The main parameter characterizing the process, the ratio D/d where D is the diameter of a bubble at the time of breaking away and d the diameter of the tube, is expressed in terms of the Bond number. The analysis shows that the absence of mass forces and even the unfavorable direction of g forces can be compensated by the motion of the fluid under specific conditions. The interaction between a forming bubble and an already detached bubble, that is, between pulsating and oscillating bubbles in a liquid is evaluated by using Zhukovskiy's method for solving the Bjerknes problem. Orig. art. has: 6 figures and 25 formulas. [AB]

Card 1/2

L 3924-66

ACC NR: AP5026052

ASSOCIATION: none

SUBMITTED: 24Oct64

NO REF SOV: 009

ENCL: 00

OTHER: 005

SUB CODE: ME

ATD PRESS

Card 2/2

L 21183-66   EWT(1)   GW

ACC NR: AP6009052   (A)   SOURCE CODE: UR/0207/66/000/001/0083/0092

AUTHOR: Lyubin, L. Ya. (Moscow); Povitskiy, A. S. (Moscow)

26
B

ORG: none

TITLE: Oblique impact of a solid body on soil

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1966, 83-92

TOPIC TAGS: impact, soil mechanics, soil impact deformation

ABSTRACT: The oblique impact on a soil surface of a solid body having a parabolic (plane problem) or paraboloidal (axisymmetric body) fore-body is reviewed. The soil is assumed capable of significant density change during compaction and is an elastoplastic medium in which uniaxial deformation is governed by the piecewise-linear law. In the first case considered, it is assumed that before impact the body does not rotate, and during penetration angular acceleration is negligibly small, since the corresponding inertia moment is significantly great. Outlined are five stages into which soil deformation can be divided when the initial-velocity component normal to the soil surface is sufficiently large. Various stages

Card 1/2

L 21183-66

ACC NR: AP6009052   0

are discussed, and formulas are derived to describe them and their
formation in terms of a plane problem. Expressions for an axisym-
metric body are derived analogously. Orig. art. has: 4 figures and
40 formulas.   [LB]

SUB CODE: 08, 20/ SUBM DATE: 06Jul65/ ORIG REF: 008/ ATD PRESS:

Card 2/2 BK

SEVCENKO, V.B. [Shevchenko, V.B.]; POVICKIJ, N.S. [Povitskiy, N.S.];
SOLOVKIN, A.S.; KORTUS, J. [translator]

Some peculiarities in processing the burnt out fuel elements
from the first atomic power plant in the Soviet Union. Jaderna
energie 4 no.11:342-344 N '58.

SHEVCHENKO, V. B., POVITSKIY, N. S. and SOLOVKIN, A. S.

"Some Features of Processing Irradiated Fuel Elements at the First Atomic Power Station in the U.S.S.R"

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sep 58.

PCVITSKIY, N.S.

78-1-40/43

AUTHORS: Povitskiy, N. S. , Solovkin, A. S. , Shilin, I. V.

TITLE: Extraction of Perchloric Acid With Tributyl Phosphate (TBPh)
             (Ekstraktsiya khlornoy kisloty tributilfosfatom)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 1, pp.222-224
             (USSR)

ABSTRACT: The second author proved (reference 1) that with zirconium-
             -extraction from perchloric acid containing solutions $HClO_4$
             passes over in analyzable quantities. Their complex-formation
             with TBPh was worth investigating in view of their application
             for the maintenance of a constant ionic density. Perchloric
             acid was extracted from water by TBPh solution in benzene or
             petroleum. The phases were equal with all tests (23 ml). The
             equilibrium was attained within 10 to 15 minutes. In tests on
             the distribution of perchloric acid between water and 3,67
             mol TBPh it was found that with increasing concentration of
             $HClO_4$ in the initial solution the quantity passing over into
Card 1/3   TBPh increases also (table 1). With the mixture of the phases

78-1-40/43

Extraction of Perchloric Acid With Tributyl Phosphate (TBPh)

an exothermic reaction takes place which is most intensely in
the case of stronger acid solutions (table 1, test 6). It was
tried to compute the equilibrium constant of the reaction of
complex-formation of $HClO_4$ with TBPh (K_1), from the obtained
results. It is shown in table 1 that K_1 is variable within vast
limits. This is apparently achieved by the ionic density of
the solution which fluctuates under the influence of the chan-
ges of concentration of the acid. With a constant ionic densi-
ty K_1 remains sufficiently constant $(6,7 \pm 0,5).10^{-2}$. In this
case the equilibrium constant of the reaction of complex for-
mation of HNO_3 with TBPh(K_2) amounts to $0,16 \pm 0,01$ (table 2).
The K_2-value is neither changed by using solutions which are
diluted by benzene or petroleum, if the ionic density of the
solution is preserved (~ 3) (table 3, 4). The value of K_2 in-
creases with diluting the TBPh-solutions up to $0,22 \pm 0,02$
(little different from references 3 to 6). It is noticeable
that the TBPh-dilution with petroleum lead to the formation
of a third phase after the extraction if the HNO_3-content in
the initial solution was small, compared with that of $HClO_4$
(table 4, test 1). The light organic phase ($d^{25^0} = 0,750$) is

Card 2/3   formed of almost pure petroleum with only a small admixture

Extraction of Perchloric Acid With Tributyl Phosphate (TBPh)   78-140/43

of TBPh and contains no $HClO_4$. The heavy organic phase (d^{25° =
= 1,001) is a solution of $HClO_4$.TBPh in TBPh. The third phase
appears also with the mixtures of 0,49 n $HClO_4$ with 0,25 mol
TBPh in petroleum. The heavy organic phase dissolves in petro-
leum after $HClO_4$ was re-extracted in water. It is not formed
with the TBPh-dilution with benzene. There are 4 tables, and
7 references, 4 of which are Slavic.

SUBMITTED: May 22, 1957

AVAILABLE: Library of Congress

Card 3/3

SOV/78-3-9-16/38

AUTHORS: Shevchenko, V. B., Povitskiy, N. S., Solovkin, A. S., Shilin,
              I. V., Lunichkina, K. P., Tsvetkova, Z. N.

TITLE: The Extraction of Nitric Acid With Tributyl Phosphate
              (Ekstraktsiya azotnoy kisloty v tributilfosfat)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 9, pp 2109-2112
              (USSR)

ABSTRACT: The distribution of nitric acid between the aqueous and the
              organic phase containing tributyl phosphate in dependence on
              the aqueous phase and the nature of the solvent of tributyl
              phosphate was investigated. From the results may be concluded
              that K_p considerably depends on the nature of the solvents of
              tributyl phosphate. The influence of the nature of the solvents
              on the distribution of nitric acid between water and tributyl
              phosphate was investigated in the case of an ionic strength
              of the solution of 1, 0,5 and 3. The maximum value of K_p in
              nitric acid solution with the ionic strength of 3 is obtained
              if toluene is used as solvent for tributyl phosphate. The
Card 1/2   change of K_p by the nature of the solvent in the case of an

SOV/78-3-9-15/38

The Extraction of Nitric Acid With Tributyl Phosphate

ionic strength of 3 is to be divided as follows: toluene, benzene, kerosene, CCl_2F-CCl_2F, CCl_4. The following variation of the above sequence takes place if the ionic strength is reduced to 1: kerosene, toluene, benzene, CCl_2F-CCl_2F, CCl_4. Comparative investigations of the extractions in $HClO_4$ and HNO_3 solutions showed that the complex $HClO_4 \cdot TBPh$ is to a greater extent polar than the complex $HNO_3 \cdot TBPh$.

There are 2 figures, 1 table, and 9 references, 4 of which are Soviet.

SUBMITTED: August 3, 1957

Card 2/2

PHASE I BOOK EXPLOITATION

SOV/5084

International Conference on the Peaceful Uses of Atomic Energy. 2d, Geneva, 1958.

Doklady sovetskikh uchenykh. [t.4] Khimiya radioelementov i radiatsionnykh prevrashcheniy (Reports of Soviet Scientists. v. 4.: Chemistry of Radio-elements and Radiation Transformations) Moscow, Atomizdat, 1959. 323 p. 8,000 copies printed. (Series: Its: Trudy)

Ed. (Title page): A. P. Vinogradov, Academician; Ed.: V. I. Labaznov; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This collection of articles is intended for scientists and engineers interested in the applications of radioactive materials in science and industry.

COVERAGE: The book contains 26 separate studies concerning various aspects of the chemistry of certain radioactive elements and the processes of radiation effect on matter. These reports discuss present-day methods of reprocessing irradiated nuclear fuel, research in the chemistry of mercury, thorium, uranium, plutonium, and americium, problems related to the sorption and bury-

Card 1/9

... V. Ukraintsev,

...skaya. Separation of Uranium and Pluto-
...chloride (Report No. 2216) ...Extraction With a Mixture of Dibutyl...

5(4)

AUTHORS: Solovkin, A. S., Povitskiy, N. S., Shilin, I. V.   SOV/78-4-6-40/44

TITLE: On the Influence of the Nitrates of Barium, Nickel, Cobalt,
             and Copper on the Extraction of Nitric Acid in Tributyl
             Phosphate (TBP) (O vliyanii nitratov bariya, nikelya, kobal'ta
             i medi na ekstraktsiyu azotnoy kisloty v tributilfosfat (TBP))

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 6,
             pp 1454 - 1456 (USSR)

ABSTRACT: The distribution of nitric acid between the aqueous and in-
             organic phase of the solution of TBP in kerosene was investi-
             gated in the presence of barium-, nickel-, cobalt-, and copper
             nitrates in the case of an ionic strength of the aqueous phase
             of 1 and 1.5. The results are summarized in a table and given
             in figures 1 and 2. The nitric acid extraction in the organic
             phase increases with the rise of the ionic strength in the
             solution. A low distribution coefficient of the nitric acid
             is obtained by the use of barium nitrate as salting-out compound.
             The same effect is obtained by cobalt-, nickel-, and copper
Card 1/2   nitrates as salting-out compounds in the case of the nitric

On the Influence of the Nitrates of Barium, Nickel,   SOV/78-4-6-40/44
Cobalt, and Copper on the Extraction of Nitric Acid in Tributyl Phosphate
(TBP)

acid extraction in the tributyl phosphate- and kerosene phase.
The extraction of the nitric acid in the organic phase TBP-
kerosene in the case of the use of salting-out compounds does
not go under the ideal distribution law. Yu. F. Zhdanov and
Z. A. Smyk assisted in the experiments. There are 2 figures,
1 table, and 4 references, 1 of which is Soviet.

SUBMITTED: March 25, 1958

Card 2/2

S/078/60/005/009/015/017
B015/B064

AUTHORS: Solovkin, A. S., Povitskiy, N. S., Lunichkina, K. P.

TITLE: Formation of the Third Phase in the System
              $UO_2(NO_3)_2$ - HNO_3 - H_2O - Tri-n-butyl Phosphate - "Kerosene"

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 9,
              pp. 2115-2118

TEXT: The formation of a third phase of the system mentioned in the title
was investigated. The uranium content was gravimetrically determined, and
the tributyl phosphate content in the organic phase (after separation)
was colorimetrically measured with a C Φ-2Ħ(SF-2) spectrophotometer.
All experiments were conducted at room temperature. It was found that the
formation of a third phase was independent of the concentration of uranyl
nitrate (at sufficiently high acidity) (Table 1). A decrease of acidity
below a certain point leads, also in the presence of large amounts of
uranyl nitrate, to the vanishing of the third phase (Table 2). Absorption
spectra (recorded by L. V. Lipis) showed that uranium appeared in the
organic phase as neutral, non-ionized molecules $UO_2(NO_3)_2$ solvated with

Card 1/2

Formation of the Third Phase in the System
$UO_2(NO_3)_2$ - HNO_3 - H_2O - Tri-n-butyl Phosphate .   S/078/60/005/009/01 /0
- "Kerosene"   B015/B064

two tributyl phosphate molecules. The determination of the solvation
number showed (Table 3) that the complex compound formed in the third phase
corresponded to the formula $H\left[UO_2(NO_3)_3\right] \cdot 2$ tributyl phosphate. There are
1 figure. 3 tables, and 9 references: 5 Soviet, 2 British, and 1 German.

SUBMITTED   April 21, 1959

Card 2/2

S/078/61/006/002/015/017
B017/B054

AUTHORS: Tsvetkova, Z. N., Solovkin, A. S., Povitskiy, N. S.,
             Davydov, I. P.

TITLE: Mechanism of Extraction of Zirconium Nitrate by Means of
             Tri-n-butyl Phosphate From High-acidity Solutions

PERIODICAL: Zhurnal neorganicheskoy khimii, 1961, Vol. 6, No. 2,
             pp. 489 - 492

TEXT: The distribution of many heavy metals between nitric acid solu-
tions and tri-n-butyl phosphate (TBP) takes place according to the
equation:

$$M^{x+} + xNO_3^- + nTBP \rightleftharpoons M(NO_3)_x TBP, \quad M^{x+} = UO_2^{2+}, NpO_2^{2+}, PuO_2^{2+}, Np^{4+}, Pu^{4+}, Pu^{3+}.$$
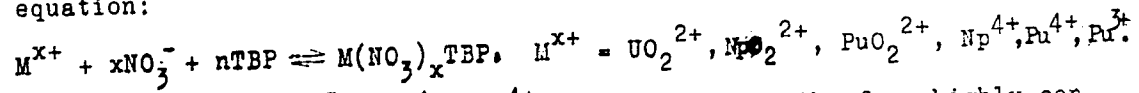
The extraction of Am^{3+}, Th^{4+}, Cr^{4+} and the rare earths from highly con-
centrated nitric acid solutions does not take place according to the
above equation. The extraction coefficient grows with rising acidity of

Card 1/3

Mechanism of Extraction of Zirconium
Nitrate by Means of Tri-n-butyl Phosphate
From High-acidity Solutions

S/078/61/006/002/015/017
B017/B054

the solution. To explain the extraction mechanism of zirconium nitrate
with tributyl phosphate from high-acidity solutions, the authors studied
the effect of the hydrogen ion concentration on the extraction coefficient.
The extractions were conducted by the method described by A. S. Solovkin
(Ref. 3). Carbon tetrachloride was used as solvent for tributyl phos-
phate. The zirconium concentrations were determined with the aid of the
radioactive isotope Zr^{95}. Results are given in Figs. 1 and 2. The authors
discussed the possibilities of increasing α_{Zr} by changing the hydrogen
ion concentration. It is assumed that the extraction of $Zr(NO_3)_4$ with
the organic phase occurs as $Zr(NO_3)_4 \cdot 4(HNO_3) \cdot TBP$ and $Zr(NO_3)_4 \cdot 2(HNO_3) \cdot TBP$.
Fig. 2 shows α_{Zr} as a function of concentration. The presence of zirconium
acido complexes in the aqueous phase hardly influences the extraction
coefficient. There are 2 figures, 2 tables, and 8 references: 6 Soviet
and 2 US.

Card 2/3

Mechanism of Extraction of Zirconium Nitrate   S/078/61/006/002/015/017
by Means of Tri-n-butyl Phosphate From High-   B017/B054
acidity Solutions

SUBMITTED: January 20, 1960

Legend to Figs. 1 and 2: a) water,
b) organic, c) TBP

Рис. 1

Рис. 2
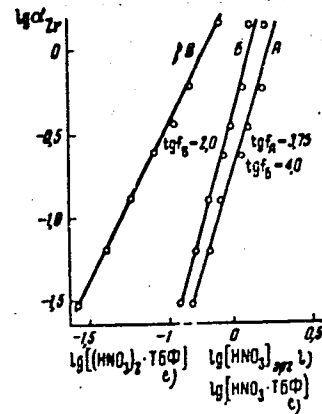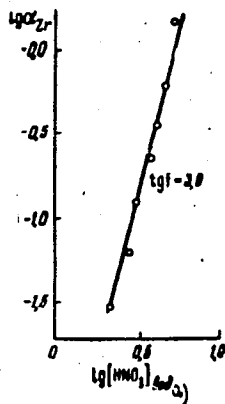
Card 3/3

LUNICHKINA, K.P.; POVITSKIY, N.S.; SOLOVKIN, A.S.

Three-phase demixing in the system $UO_2(NO_3)_3$ HNO_3 - H_2O - diisoamyl ester of methylphosphinic acid - "kerosine" in the presence of oxalic acid. Zhur. neorg. khim. 7 no.8: 2019-2020 Ag '62.
(MIRA 16:6)

(Uranyl nitrate)   (Systems(Chemistry))

POVITSKIY, N.S.; SOLOVKIN, A.S.; SHILIN, I.V.

Perchloric acid extraction by tributyl phosphate. Zhur. neorg. khim.
3 no.1:222-224 Ja '58.   (MIRA 11:3)
    (Systems (Chemistry))   (Perchloric acid)   (Butyl phosphate)

SOLOVKIN, A.S.; TSVETKOVA, Z.N.; POVITSKIY, N.S.

Study of complex formation of zirconium with α and β-aminopropionic acids in nitric acid solutions by a method involving extraction.
Zhur.neorg.khim. 7 no.4:937-939 Ap '62.   (MIRA 15:4)
          (Zirconium compounds) (Propionic acid)

35081
S/704/61/000/002/004/006
D201/D302

9.7910

AUTHOR: Povitskiy, O. V., Engineer

TITLE: A reproducing magnetic head with magnetic amplification

SOURCE: Ukraine. Gosudarstvennaya planovaya komissiya. Institut avtomatiki. Avtomatizatsiya i priborostroyeniye; sbornik nauchnykh trudov, no. 2, Kiyev, 1961, 88-96

TEXT: The author describes a highly sensitive modulated magnetic head (MMH). The recorded signal is reproduced by two standard permalloy cores, with their ends cut-off at 2/3 of the distance from the tape end. A thin ferrocast - 2000-II toroid on an insulated base is placed on top of the cores. The toroid has two excitation windings L_1 and L_2, which together with the capacitors C_1 and C_2 and a variable resistor R_{bal}, form an AC bridge. Two subsidiary windings are placed on the two cores: L_{imit} and L record which are used for recording the signals and for applying a small a.c. current initiating the reproduced signal. The head circuit forms ⨉

Card 1/4

A reproducing magnetic head with ...

S/704/61/000/002/004/006
D201/D302

a miniature magnetic amplifier, in which the control flux is produced not by the control windings, but is introduced into the core during reproduc- tion of the recorded magnetic signal. The high reproduction efficiency of the head is achieved by use of a highly sensitive half-wave linear mag- netic signal voltage amplifier with second harmonic output, an internal positive feedback and the use of ferrite as the saturating magnetic ma- terial. The amplifier is designed as a resonant bridge circuit with a three-limb core. The magnetic flux from the reproduced signal passes through the toroid in one direction from one reproducing core to another. The excitation windings (L_1 and L_2) are connected so that the excitation flux in the toroid closes on itself in a circle. In the absence of the signal the bridge circuit is balanced for the minimum of the output volt- age. During reproduction of magnetic recording, the excitation flux adds to that of the signal in one of the arms of the core (+) and substract from it in the other (-). The excitation is chosen so as to be near the saturation of the head core. During the process of summing of the magnetic fluxes, the saturation occurs somewhat earlier in the arm of the bridge in

Card 2/4

A reproducing magnetic head with ...

S/704/61/000/002/004/006
D201/D302

which at the given instant the direction of fluxes is the same. As a result asymmetrical non-linear distortions of the magnetic flux appear in each of the core limbs, i.e. even harmonics, shifted by $180°$, are developed in the bridge arms. The difference magnetic flux circuit is completed by the middle limb and the e.m.f. induced by the latter, in L_1 and L_2 is the useful part of the head output voltage. This voltage is detected by an amplitude detector (semi-conductor diode Д 7E (D7Ye); R_f and C_f) and is then applied to either an amplifying or shaping circuit. The resonance tuned bridge and the special properties of the excitation circuit make it possible to obtain a high head arc as follows: Modulator - ferrocast 2000-II, dia 21/11 mm; height - 0.5 mm. Excitation windings 2 x 800 turns of ПЭЛ-0.07 (PEL-0.07); recording winding 2 x 250 turns of PEL-0.1; gap - 15 microns; capacitors - 470 OpF; balancing resistor 430 ohms; excitation frequency f_{exc} = 13.9 kc/s; excitation voltage 22.3 V; the D7Ye diode with the highest reverse resistance. The signal frequency range reproduced by a modulated magnetic head is a max. 20% of that of the

Card 3/4

A reproducing magnetic head with ...   S/704/61/000/002/004/006
                                         D201/D302

carrier, the fundamental carrier frequency being the second harmonic of the
excitation voltage 20-30 kc/s. This range is in practice narrower, owing
to the distortion at low recording speeds inherent to magnetic recording.
The actual efficiency of reproduction is irrespective of its limitations,
several hundred times better than that of earlier systems and permits con-
siderable simplification of the associated circuitry, improving the in-
terference-suppressing properties of magnetic recording and opens new pos-
sibilities in application. There are 6 figures and 10 references: 8 So-
viet-bloc and 2 non-Soviet-bloc. The references to the English-language
publications read as follows: L.M. Ferber, IRE national conventional Re-
cord, 1958, v. 6, no. 4; D.E. Wiegand, Frontier, v. 17, no. 4.

Card 4/4

MALYUCHKOV, O.T.; POVITSKIY, V.A.

Investigation of transition metal borides and pure boron by
nuclear magnetic resonace. Porosh.met. 2 no.4:26-34 Jl-Ag '62.
(MIRA 15:8)

1. Moskovskiy institut stali.
                (Borides)   (Boron)
        (Nuclear magnetic resonance and relaxation)

MALYUCHKOV, O.T.; POVITSKIY, V.A.

Investigating CrB, LaB_6 and crystalline boron by the method
of nuclear magnetic resonance. Fiz. met. i metalloved. 13
no.6:933-934 Je '62.   (MIRA 15:7)

1. Moskovskiy institut stali.
                              (Borides)
            (Nuclear magnetic resonance and relaxation)

MALYUCHKOV, O.T.; POVITSKIY, V.A.

Investigating transition metal borides by means of nuclear magnetic
resonance. Fiz. met. i metalloved. 13 no.5:676-680 My '62. (MIRA 15:6)

1. Moskovskiy institut stali.
                       (Transition metals)
               (Nuclear magnetic resonance and relaxation)

POVITSKIY, V.A.; TSALAPAYEV, A...

Use of a permanent magnet in weighing a mixture. Izv.
tekh. fiz. 34 no.8:1462-1465 Ag '64.

L 9043-65   EWT(m)/EPA(w)-2/EWA(m)-2   Pab-24/Pt-10   IJP(c)/RAEM(t)/AS(mp)-2

S/0057/64/034/008/1462/1465

ACCESSION NR: AP4042935

B

AUTHOR: Povitskiy, V. A.; Tsarapayev, A. I.

TITLE: Possibility of constructing a permanent-magnet microtron /9

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 34, no. 8, 1964, 1462-1465

TOPIC TAGS: microtron magnetic system, permanent magnet, magnet temperature stability

ABSTRACT: The possibility of using modern magnetically hard materials for constructing a microtron magnetic system is discussed. Since the relatively higher power capacity of permanent magnets makes it possible to obtain a more effective structure of a microtron magnetic system and to reduce its weight 2—4 times, the operation of a permanent-magnet microtron becomes simpler and more reliable, and power consumption is reduced by more than 50 percent. When adjusting a microtron, the intensity of its magnetic field can be controlled by shunting the magnetic flux with iron inserts, by varying the height of the gap, and by varying the current flow in the regulating coils. The precise accomplishment of resonance conditions for electron acceleration in the microtron can be achieved by the adjustment of the h-f field frequency and amplitude. The high temperature stability

Card 1/2

L 9043-65

ACCESSION NR: AP4042935

O

of magnetic alloys provides a steady electron energy during the change of ambient temperature. The experiments were carried out with a permanent-magnet magnetron for 5 Mev. The design of such a device has been considerably simplified, however, and there is a strong possibility that it could be utilized as a 5--10 Mev electron source for biological and physical investigations. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 09Jun62   ATD PRESS: 3105   ENCL: 00

SUB CODE: NP   NO REF SOV: 008   OTHER: 003

Card 2/2

24.7900

39766
S/126/62/013/006/015/018
E202/E492

AUTHORS: Malyuchkov, O.T., Povitskiy, V.A.

TITLE: Nuclear magnetic resonance study of CrB, LaB_6 and
            crystalline boron

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.6, 1962,
            933-934

TEXT: NMR signal from B^{11} was observed in CrB, LaB_6 and three
allotropes of B ;   all samples were 99% pure, the compounds being
in powder form $< 72\,\mu$,   and B in pressed cylinders of
11 mm diameter and 22 mm height.   The radiospectrometer used was
described by O.T.Malyuchkov and V.S.Pavlovskaya (NDVSh,
Metallurgiya, no.3, 1958, 231).   In CrB, the quadrupole bond
constant b = 72 $\pm$ 7 kcs, but when one or two p-levels of B were
filled b = 4700 kcs,   and when all three 2p-levels were evenly
filled b = 0.   In the b.c.c. LaB_6 , each La atom must transfer
two electrons to the B_6 octahedron while the B - B bond is highly
anisotropic consaquently giving more distorted line than CrB.
Frequency shifts were determined viz.   parallel 6.7×10^{-4} and
perpendicular 16×10^{-4} from the resonance frequency and
Card 1/2

Nuclear magnetic resonance ...

S/126/62/013/006/015/018
E202/E492

b = 50 $\pm$ 10 kcs.   First Boron sample comprises 50 to 60% v/v
amorphous phase, while second and third contained the α- and
β-rhombohedral modifications.   The degree of amorphousness was
determined from the background intensities of X-ray diffraction
photographs at low scattering angles.   All three Boron samples
gave low intensity NMR spectra with the absorption spectrum
consisting of a narrow central line with wide, gradually falling-off
wings, the width of the latter differing in each sample.   There
is 1 figure.

ASSOCIATION: Moskovskiy institut stali
               (Moscow Steel Institute)

SUBMITTED: August 5, 1961 (initially)
             December 12, 1961 (after revision)

Card 2/2

Povlotskiy M.Z.

SUBJECT: USSR/Flood Conduits

AUTHOR: Shtepa, B.G., Engineer, and Povlotskiy,M.Z., Engineer

TITLE: "Prefabricated, Prestressed Reinforced Concrete Flood Conduits"
             (Sbornyye livneprovody iz napryazhenno armirovannogo zhelezobe-
             tona).

PERIODICAL: "Gidrotekhnika i Melioratsiya", 1957, # 7, pp 24-28, (USSR)

ABSTRACT: Flood conduits across canals are built of reinforced concrete,
             and are generally either trough or tubular shaped. Prepara-
             tion of designs for the building of prefabricated flood conduits
             will enable to mechanize and speed up installation, as well as
             effect considerable savings at construction costs. The aqua-
             duct designed by the authors has a capacity of 2.5 cu m/sec,
             a cross section of 0.51 square meters, and a difference of
             levels between the upper and lower pools of 2.7 m. The structu-
             re consists of a total of 97 concrete blocks of 6 different
             types. The prestressed units are manufactured by means of
             hydraulic jacks of the type TsNIS MPS (ЦНИС МПС) with a capa-
             city of 60 tons or the conventional hydraulic jack DG-100
             (ДГ-100) with the special stressing attachment DORNII (ДОРНИИ).

Card 1/2

TITLE:
"Prefabricated, Prestressed Reinforced Concrete Flood Conduits"
Sbornye livneprovody iz napryazhenno armirovannogo zhelezobe-
tona).

Considerable savings in metal and cement can be made by using
prestressed prefabricated reinforced parts.

The article contains 2 figures and 1 table, and lists 1
reference (Slavic).

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 2/2

S/226/62/000/004/004/012
I003/I203

AUTHORS: Kalyuchkov, O.T. and Povitskiy, V.A.

TITLE: Investigation of the borides of transition metals and of pure boron
by nuclear magnetic resonance

PERIODICAL: Poroshkovaya Metallurgiya, No.4, 1962, 26-34

TEXT: In order to investigate the nature of the chemical bonds of the above
compounds, isomorphic diborides of $Ti, Zr, Nb, Ta, Cr, Mo_2B_5$, CrB, LaB_6, and three differ-
ent samples of pure boron were investigated by an X-ray spectrometer. The investiga-
tions were carried out in a magnetic field with an intensity of 5030 oersted and a
frequency of 6860 kc. A formula is given for the calculation of the gradient of the
electric field at the site of the nucleus: (3)

$$q = \sum |\psi|^2 \left\{ (3\cos^2\vartheta_i - 1) r_i^{-3} \right\} dt$$

Elements with complete subshells (Sn, Pb, Hg, Cd, Au, As etc.) do not form borides. In
diborides as in monocarbides and mononitrides, the d-shell of the transition metal is
complete. There are 5 figures.

Card 1/2

Investigation of the borides...   S/226/62/000/004/004/012
                                          I/003/I203

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: January 15, 1962

Card 2/2

S/126/62/013/005/006/031
E202/E492

AUTHORS: Malyuchkov, O.T., Povitskiy, V.A.

TITLE: Nuclear magnetic resonance studies of transitional
            metal borides

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.5, 1962,
            676-680

TEXT: Diborides of Ti, Zr, Nb, Ta and Cr, and also Mo_2B_5 were
studied.   The NMR signal from B^{11} was observed at 6866 kcs in a
magnetic field of 5030 oersted, using an RF spectrometer
previously described.   The field nonuniformity within the 2 cm^3
sample did not exceed 0.1 oersted.   Samples were 99% pure and
approaching stoichiometric composition.   In all the compounds
X-ray phase analysis showed the presence of single phase.   The
quadrupole bond constant B_1 was measured from the distance of
the two satellite lines and the (strong) central line.   Except
for CrB_2 and Mo_2B_5, the satellites were observed directly; in
the case of CrB_2, the secondary effects of the strong quadrupole
interaction made the value of B very inaccurate.   The
satellite of Mo_2B_5 was not found in the range $0 < B < 200$ kcs,
Card 1/3

Nuclear magnetic resonance ...

S/126/62/013/005/006/031
E202/E492

hence only a very approximate value was given.   Experimental values of the authors are compared below with those calculated by C. Townes and B. Daily (J. Chem. Phys., v.17, no.3, 1949, 782).

		TiB_2	ZrB_2	NbB_2	TaB_2	CrB_2	Mo_2B_5
B_{exp}	kcs	127 ± 13	84 ± 8	50 ± 3	114 ± 11	900 ± 300	$300 \pm ^{300}_{100}$
B_{calc}	kcs	175	58	46	68	542	473

The authors studied also the change in the physical properties when a boride is formed from the respective metal and when one metal replaces another in the boride molecule.   The former reaction was attributed to the filling of the incomplete d-shell. This formation is responsible for a negative Hall constant, lowering the probability of the s-d transitions and making the s-electrons participate in the conductivity.   With the gradual filling of the d-shell the modulus of the Hall coefficient also decreases and the interatomic bond boron-metal weakens, which
Card 2/3

Nuclear magnetic resonance ...

S/126/62/013/005/006/031
E202/E492

gives higher phonon dissipation and lower electron mobility.
These relations were further exemplified on a plot of relative
melting points of diborides. It was concluded that in common
with monocarbides and mononitrides, the diborides undergo
characteristic filling of the d-shell of the transitional metal
with the valency electrons of the metalloid atoms. There are
3 figures and 1 table.

ASSOCIATION: Moskovskiy institut stali
              (Moscow Steel Institute)

SUBMITTED: July 15, 1961

Card 3/3

39222

$\bar{c}$ ₿.2145
₿4.4300

S/207/62/000/003/001/016

I028/1228

AUTHOR: Lyubin, L. Ya. and Povitzkiy, A. S. (Moscow)

TITLE: Motion of gas bubles caused by pressure fluctuations in the liquid in the absence of mass forces

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1962, 3-9

TEXT: The paper extends the Bjerkness-Zhukovskiy analysis of the force of interaction between fluctuating spheres to the case of motion of gas bubbles caused by pressure fluctuations. The translational motion of two gas bubbles, suspended in a liquid occupying a spherical volume on whose external surface acts a fluctuating pressure p(t), is examined. The Lagrangian equations of motion are integrated for the case $p(t) = p_0 + p \sin mt$ under some simplifying assumptions and neglecting the mass forces. The results obtained are extended to the case of a liquid contained in a vessel of arbitrary shape, and also to the case of an unique bubble placed near the vessel wall. There is 1 figure.

SUBMITTED: January 30, 1962

Card 1/1

PETROV, I.T.; POVKH, B.V.; BLIKHARSKIY, B.A.; CHERNOV, V.I. [deceased];
      KLITINA, S.Ye.; ROZANOV, Ye.M.; SHUFLAT, A.N.

      Incidence of influenza and acute catarrhs of the upper respira-
      tory tracts in miners of Chervonograd, Lvov-Volyn' Basin. Vrach.
      delo no.1:105-109 Ja'64   (MIRA 17:3)

      1. Chervonogradskaya mediko-sanitarnaya chast' kombinata
      Ukrzapadugeol' (for Petrov, Povkh, Blikharskiy). 2. Kafedra
      propedevticheskoy terapii lechebnogo fakul'teta - sav.
      dotsent V.I.Chernov [deceased]) L'vovskogo meditsinskogo insti-
      tuta (for Klitina, Rozanov, Shuflat).

C A

Pressure effect on the rate of reaction in solutions. M. G. Gonikberg and G. S. Povkh. *Zhur. Fiz. Khim.* 23, 383-7(1949).—In a reaction $A + B = AB$ the vol. (v) of the activated complex should be almost equal to that of AB and the pressure dependence of the reaction rate should be detd. by the difference between the vols. of AB (v) and of A and B. Because this is not so in the addn. of EtI to pyridine in COMe₂, Stearn and Eyring (C.A. 36, 2778) developed another theory. However in solns. v may appear to be different from v because of solvation. For 1-ethylpyridinium iodide $d_4 = 1.5571 + 0.00782 (151.5 - t)$ between $t = 92°$ and $151.5°$; i.e. its mol. vol. at m.p. is 140.0 cc. whereas its partial mol. vol. in COMe₂ is 116 cc. The value 140.0 agrees with vol. calcn. from the pressure effect on the rate of addn. of EtI to pyridine. Cf. Perrin, C.A. 31, 2814². J. J. B.

A S B - S L A   METALLURGICAL LITERATURE CLASSIFICATION

DUBOVYY, M.I., assistent; SHCHERBAKOVA, A.K., assistent; POVKH, B.V.;
    GZHEGOTSKIY, M.I.

Therapeutic and preventive measures in reducing suppurative
diseases among miners of the Lvov coal basin. Vest.derm.i ven.
no.9:51-53 '61.   (MIRA 15:5)

1. Iz kafedry kozhnykh i venericheskikh boleznoy (zav. - prof.
A.A. Shteyn) L'vovskogo meditsinskogo instituta (dir. - prof.
L.N. Kuzmenko). 2. Zam. glavnogo vracha mediko-sanitarnoy chasti
(for Povkh). 3. Glavnyy vrach sanitarnc-epidemiologicheskoy
stantsii Chervonograda (for Gzhegotskiy).
        (LVOV-VOLYN' BASIN—COAL MINERS—DISEASES AND HYGIENE)

BEER, A. A.; ZAGORETS, P. A.; INOZEMTSEV, V. F.; POVKH, G. S.;
POPOV, A. I.

Radiation-induced chemical telomerization of olefins. Nefte-
khimia 2 no.4:617-623 Jl-Ag '62.   (MIRA 15:10)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni
Mendeleyeva.

          (Olefins)   (Polymerization)   (Radiation)

POWER, G. S.

"Problem of the Action of Pressure on the Speed of Reactions in Solutions," Izv.

Fiz. Khim., 23, No. 4, 1949.

Mos. Inst. Organic Chemistry, Dept. Chem. Sci., Acad. Sci., -c19uc-.

KIRILLOV, N.I.; ANTONOV, S.M.; POVKH, G.S.;KIRILLOVA N.Ye.

Accelerated NIKFI processes for the treatment of multilayer
photosensitive color materials for motion-picture photography.
Part 1.Statement of the problem and order of operations in de-
veloped processes. Usp.nauch.fot.no.4:269-280 '55. (MLRA 9:4)
                    (Color photography)

POVKH, G.S.

Motion Pictures and Photography) methods for the processing of multilayer light-sensitive color motion-picture materials. N. I. Kirillov, S. M. Antonov, G. S. Povkh, and N. B. Kirillova. Uspekhi Nauch. Fot., S.S.S.R., Otdel. Khim. Nauk 4, 259-58 (1955). cf. Chel'tsov and Bongard, C.A. 47, 9329d.—A rapid method for processing negative-positive color film is described which consists of 5 steps: development, 1st wash, fixation, combined bleaching and fixation, and 2nd wash. The fixing bath which is maintained at pH 6.0-6.5, contains thiosulfate, sulfite, and bisulfite ions. When the film is bleached, it retains enough of these ions to react with the oxidation product of the residual developer, thus minimizing colored fog and completely dissolve the Ag salt produced by the bleaching agent. The fixing bath giving the least colored fog contained $Na_2S_2O_3.5H_2O$ 200 g., Na_2SO_3 25 g., concd. H_2SO_4 2 ml., and water to make one l. Total processing time at temps. up to 18° was 26-38 min. for negative film, 22-36 min. for positive film, and 14-23 min. for paper. The d. of the colored fog is about the same as in earlier, longer processes.

L. W. Loxeberg, Jr.

AUTHORS: Beer, A.A., Zagorets, P.A., Inozemtsev, V.F.,
            Povkh, G.S., Popov, A.I.

TITLE: Radio-chemical telomerization of olefines

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 617-623

TEXT: Additional data are presented on the telomerization
between ethylene and carbon tetrachloride, and the reaction between
tetrafluoroethylene and isopropylalcohol.   The experiments were
conducted in a thermostatically controlled autoclave at 16 to
100 atm pressure in the absence of oxygen.   The ethylene - CCl_4
mixture was irradiated with γ-rays from Co^{60} with the activity
of about 350 g/equiv radium.   The activity of the source for the
$C_2H_2F_4$ - alcohol mixture was 120 g/equiv radium.   The molar ratio
C_2H_4 - CCl_4 was varied from 0.2:1 to 3.8:1 and the reaction was
studied at 20, 50 and 100°C.   It was established that the content
of individual telomers in the reaction product is given by the
following approximate equations

$$F_1 = \frac{C_1R}{C_1R + 1}; \quad F_2 = \frac{C_2R}{(C_1R + 1)(C_2R + 1)}; \quad F_3 = \frac{C_3R}{(C_1R + 1)(C_2R + 1)(C_3R + 1)}$$

etc.

Card 1/3

Radi-chemical telomerization ...   S/204/62/002/004/018/019
E075/E435

where F_n is the molar proportion of telomer with n olefine residues, C_n - the chain transfer constant for the radical leading to the formation of telomer with n olefine residues and R - the molar ratio of telogen to olefine in the reaction mixture. When the ratio is changed from 3.8:1 to 0.2:1, a marked increase in the yield of tetrachloropropane is observed (from 3 to 5% to 63 to 100°C). The results were used in the development of radio-chemical plant with an output of 8 kg/hour of tetrachloroalkanes with Co source activity of about 15000 g/equiv radium in a reactor of 0.5 m^3 volume and 800 mm in diameter. Telomerization between $C_2H_2F_4$ and lower alcohols was studied at room temperature. The radio-chemical yield decreases in the series propanol-2 > butanol-1 > ethanol > butanol-2 > methanol. The reaction conditions were selected so as to eliminate completely the formation of high molecular weight compounds. There are 4 figures and 2 tables.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut
            im. Mendeleyeva (Moscow Institute of Chemical
            Technology imeni Mendeleyev)
Card 2/2

POVKH, I. L.

Cand. Technical Sci.

Mor., Leningrad Polytechnic Inst. im. M. I. Kalinin, -1941-ch8.

"Experimental Investigation of the Boundary Layer in a Double-angled Profile,"

Zhur. Tekh. Fiz., 14, Nos. 10-11, 1944;

"Study of the Blades of Turbine Machines in Static Air Equipment ," Kotloturbostr y.,

No. 2, 1948;

"The Influence of Spacing on Aerodynamic Characteristics of Fixed Turbine Blade

Profiles," Ibid., No. 6, 1949.

POVKH, I. L.

USSR/Engineering   Mar/Apr 48
     Turbines--Blades
     Dynamics

"Study of the Blades of Turbine Machines in Static
Air Equipment," I. L. Povkh, Cand Tech Sci, LPI
imeni Kalinin, $4\frac{1}{2}$ pp

"Kotloturbostroy" No 2

Describes methods used for studies conducted on
static air experimental equipment to determine
effects of operating and control blades, which
comprise central assembly.

1/49T48

POVKH, I. L.

PA 63/49T21

USSR/Engineering   Nov/Dec 48
    Turbines
    Blades

"The Influence of Spacing on Aerodynamic Char-
acteristics of Fixed Turbine Blade Profiles,"
I. L. Povkh, Cand Tech Sci, 3½ pp

"Kotloturbostroy" No 6

Establishes influence of spacing on pressure dis-
tribution, losses, coefficient of leverage, and
coefficient of drag of the fixed blade profiles.
Gives results for experimental investigation of
effects of spacing on efficiency and the value

USSR/Engineering   (Contd)   Nov/Dec 48   63/49T21

of the effective outlet-flow angle. Concludes that
effect of spacing depends to large extent on the
nature of flow (expansive or compressive). Analysis
of pressure distribution curves also reveals rea-
sons for changes in the total characteristics of
the blades.

63/49T21

POVKH, I. L.

"Calculations of Efficiency and Resistance of Profile." Grids. LPI, (1952)

POVKH, I. L.

"Cavitation Characteristics of Profiles".
Kotloturbostroyeniye, No 5, pp 17-21, 1953

On the basis of data concerning the distribution of pressure for wing profiles in a flat parallel flow, this article investigates the relation of the value K (coefficient of cavitation) to the coefficient of lift and geometric characteristics of the profile. In the investigation of conditions of cavitation formation in a profile, occurring in a system of infinite lattices, the solution given in the work of F. Liblayn /-Lieblein?-7 (Vopr. rakethoy tekhniki, 1952, No 3, p 9) is used. (RZhMekh, No 8, 1955)

SO: Sum No 812, 6 Feb 1956

POVKH, Ivan Lukich; BOGDANOVA, V.V., redaktor; ZABRODINA, A.A., tekh-
nicheskiy redaktor.

[Miniature-scale operation of hydraulic turbines in air currents]
Modelirovanie gidravlicheskikh turbin v vozdushnykh potokakh.
Moskva, Gos.energ.izd-vo, 1955. 147 p.   (MLRA 8:11)
     (Hydraulic turbines-- Models)

10(3,4)

PHASE I BOOK EXPLOITATION   SOV/3193

Leningrad. Politekhnicheskiy institut imeni M.I. Kalinina

Trudy, no. 198] Tekhnicheskaya gidromekhanika (Industrial Hydro-mechanics) Moscow, Mashgiz, 1958. 220 p. Errata slip inserted. 1,500 copies printed.

Resp. Ed.: V.S. Smirnov, Doctor of Technical Sciences, Professor; Ed. of this book: L.G. Loytsyanskiy, Doctor of Physical and Mathematical Sciences, Professor; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz]: P.I. Petlsov, Engineer; Tech. Ed.: R.G. Pol'skaya.

PURPOSE: This book is intended for engineers working in the field of machine construction.

COVERAGE: This collection of articles contains the results of original work in the field of theoretical and applied hydroaero-dynamics, completed in the aerodynamics laboratory of the LPI (Leningrad Polytechnic Institute) by members of the department of hydroaerodynamics and the department of theoretical mechanics. The book is divided into four parts. The first part contains studies of turbine steam-exhausts. The first article gives the results of a laboratory study on model-experiments on a test-stand and the general conclusions drawn therefrom. The second part contains articles on the theory of laminar and turbulent motion of a viscous fluid. The articles treat the hydrodynamic theory of friction in bearings and suspensions, boundary layers and jets, the initial part of a pipe in the presence of vortex, and the motion of air under the action of a corona conductor. The articles in the third part belong to the field of applied hydrodynamics. One of the articles is a theoretical and experi-mental study of flow around the parts of a radar antenna. The second article contains the results of aerodynamical analyses of fish-net models. The fourth part of the book contains the results of laboratory experiments on establishing new methods of aero-dynamical measurements (friction forces on the surface of a streamlined body, pressure distributions in nonstationary flows). References accompany individual articles.

PART ONE. A STUDY OF TURBINE STEAM EXHAUSTS

DANILEVSKIY, Viktor Vasil'yevich, akademik; BRITKIN, A.S., prof., red.;
POVKH, I.L., prof., doktor tekhn.nauk, retsenzent; GOFMAN,
Ye.K., red.izd-va; SOKOLOVA, L.V., tekhn.red.

[Nartov and "Clear sight of machines"] Nartov i "IAsnoe
zrelishche mashin." Pod red. A.S.Britkina. Moskva, Gos.
nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1958.   271 p.
(MIRA 13:1)

1. AN USSR (for Danilevskiy).
(Nartov, Andrei Konstantinovich, 1683-1756)

POVKH, I.L.

Some results of investigating models of hydraulic turbines in the
air. Trudy LPI no.198:7-18 '58.   (MIRA 12:12)
                (Hydraulic turbines)

PHASE I BOOK EXPLOITATION   SOV/31C5

28(6)

Povkh, Ivan Lukich

Aerodinamicheskiy eksperiment v mashinostroyenii (Aerodynamic Experimentation in Machine Building) Moscow, Mashgiz, 1959. 394 p. 3,000 copies printed.

Reviewer: I. I. Kirillov, Doctor of Technical Sciences, Professor; Ed.: V. V. Bogdanova, Candidate of Physical and Mathematical Sciences; Eds. of Publishing House: N. Z. Simonovskiy and G. A. Dudusova; Tech. Ed.: L. V. Shchetinina; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz): F. I. Petisov, Engineer.

PURPOSE: The book is intended for engineers and technical personnel in laboratories, scientific research institutes, and design offices. It may also be used by students of schools of higher technical education.

COVERAGE: The book deals with aerodynamic experimentation. Descriptions of experimental wind tunnels and other testing installations, together with such component elements as test sections,

Card 1/9

Aerodynamic Experimentation (Cont.)   SOV/3106

confusers, diffusers, elbows, screens, and honeycombs, are pre-
sented. Methods of measuring pressures and velocities of air
flow and methods of measuring steady-and unsteady-state para-
meters of flow and rotating parts are discussed. Electro-
hydrodynamic and gas-hydraulic analogies are drawn. Part of
Chapter VII and other sections of the book dealing with elec-
trical-and radio-engineering measurements were written by
Engineer G. V. Smirnov. There are 173 references: 134 Soviet,
25 English, 13 German, and 1 Polish.

TABLE OF CONTENTS: 3

Card 2/9

Aerodynamic Experimentation (Cont.)   30"/3106

    3.   Effect of the Reynolds number on res...
    4.   The Mach number and its effect on re...   9
    5.   Euler and Strouhal numbers
    6.   Prandtl number and the exponent of the isentropic curve
    7.   Froude number and other numbers of similitude

Ch. II. Wind Tunnels
    8.   Methods of aerodynamic experimentation
    9.   Continuous-flow wind tunnels
    10. Intermittent-type wind tunnels
    11. Test section and nozzle of the supersonic wind tunnel
    12. Shock tubes

Ch. III. Installations for the Study of the Flow Passages of
          Turbomachinery
    13. Methods of investigation
    14. Installations for the study of grids   64
    15. Methods of experimenting with grids   70
    16. Experimental machines
    17. Installation for the modeling of flow in hydraulic

Card 3/9

Aerodynamic Experimentation (Cont.)   SOV/3106

Card 4/9