BERNATSKIY, Yu.P.; MAYDENOVA, V.A.

Decomposition of phosphogypsum into lime and sulfur dioxide.
[Trudy] SIUIF no.160:138-151 '58.   (MIRA 12:8)
          (Gypsum) (Lime) (Sulfur dioxide)

BERNATSKIY, Yu.P., rukovoditel' raboty; ITKINA, D.Ya.; URUSOV, V.V.;
        MAKAROVA, Ye.I.; SHPUNT, S.Ya.; MAYDENOVA, Ye.A.; PASTUKHOVA, M.G.
        KOKINA, Z.V.; VODZINSKAYA, Z.V.; LAPSHINA, L.V.; VAS'YANOV, V.P.;
        KUSHNIR, O.F.; NIKITINA, N.A.

Decomposition of phosphogypsum into lime and sulfur dioxide in
a sevenmeter rotary kiln. [Trudy] NIUIF no.160:152-180 '58.
                                          (MIRA 12:8)

1.Sotrudniki Nauchnogo instituta po udobreniyam i insektofungisidam
(for Bernatskiy, Itkina, Urusov, Makarova, Shpunt, Maydenova,
Pastukhova, Kokina, Vodzinskaya). 2.Sotrudniki Opytnogo zavoda
Nauchnogo instituta po udobreniyam i insektofungisidam (for Lapshina,
Vas'yanov, Kushnir, Nikitina).
        (Gypsum) (Lime) (Sulfur dioxide)

BERNATSKIY, Yu.P.; NAYDENOVA, V.A.

Roasting of Rozdol sulfur ores in a fluidized bed. Sbor. mat.
po obm. opyt. NIUIF no.12:43-52 '59.   (MIRA 16:12)

1. Nauchnyy institut po udobreniyam i insektofungisidam imeni
prof. Samoylova.

GOL'TSOV, Vladimir, komandir korablya; MAKAROV, Fedor Timofeyevich;
    BORDACHEV, Vladimir, komandir samoleta, komsomole'ts;
    NAYDENOVA, Valentina; IVANOV, Boris Mikhaylovich;
    KULIKOVA, Galina, inzh; KARPYCHEVA, Alla, inzh.-ekonomist;
    GRIGOR'YEV, G.

By the call of conscience. Grazhd. av. 21 no.6:12-13 Je '64.
                                                    (MIRA 17:8)
1. Sekretar' podrazdeleniya Vsesoyuznogo Leninskogo kommunisti-
cheskogo soyuza molodezhi pri Bykovskom ob"yedinennom aviapodraz-
delenii (for Gol'tsov). 2. Zamestitel' komandira Bykovskogo
ob"yedinennogo aviapodrazdeleniya po politchasti aviatsii
spetsial'nogo primeneniya (for Makarov). 3. Chlen komsomol'skogo
shtaba "Za kul'turnoye obsluzhivaniye passazhirov" pri Bykovskom
ob"yedinennom aviapodrazdelenii (for Naydenova). 4. Nachal'nik
Lineynoy ekspluatatsionno-remontnoy masterskoy Bykovskogo
ob"yedinennogo aviapodrazdeleniya (for Ivanov). 5. Chleny
komiteta Vsesoyuznogo Leninskogo kommunisticheskogo soyuza
molodezhi, Bykovskoye ob"yedinennoye aviapodrazdeleniye (for
Kulikova, Karpycheva). 6. Spetsial'nyy korrespondent zhurnala
"Grazhdanskaya aviatsiya" (for Grigor'yev).

NAYDENOVA, V.D.

Mineral water at Starobel'sk, Lugansk Province.   Vop.kur.fizioter.
1 lech. fiz. kul't. 23 no.5:467 S-O '58   (MIRA 11:11)

1. Glavnyy vrach Starobel'skoy vodolechebnitsy.
        (STAROBEL'SK—MINERAL WATERS)

NAYDENOVA, V.I.

Hydrochemical characteristics of reservoirs in the Turgay
Depression. Trudy GGI no.102:169-208 '63.   (MIRA 16:8)
                (Turgay Gates—Water—Composition)

BARER, A.S.; NAYDENOVA, Z.M.

Working with the flame photometer. Lab. delo 6 no.5:14-16 S-O '60.
                                              (MIRA 13:9)
1. Voyennaya kafedra TSentral'nogo instituta usovershenstvovaniya
vrachey (dir. V.P. Lebedeva).
                          (PHOTOMETRY)

USSR / Diseases of Farm Animals.   General Problems.   R-1

Abs Jour   : Ref Zhur - Biol., No. 17, 1958, No. 78904

Author   : Naydenskiy, M. S.
Inst   : Not given
Title   : Use of ABK for Prophylaxis and Treatment of Diarrhea in
            Young Pigs.

Orig Pub : Svinovodstvo, 1958, No. 2, 40-41.

Abstract : No abstract.

Card 1/1

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BUGAY, P.M.; BAZHENOVA, L.M.; GOL'BERKOVA, A.S.; KONEL'SKAYA, V.N.;
NAYDERNOVA, I.I.

Electron spectra and the nature of the absorption bands of
aromatic amine derivatives. Part 2: Electron spectra
of diphenylamine and its hydroxy- and methoxy derivatives.
Zhur.fiz.khim. 37 no.2:378-386 F '63.   (MIRA 16:5)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina.
                (Diphenylamine—Absorption spectra)

06189

9 (2)   SOV/115-59-11-17/36

AUTHOR: Nayderov, V.Z.

TITLE: The Function of a Vibratory Converter in a DC Amplifier

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 11, pp 43-45

ABSTRACT: Direct current amplifiers with vibratory converters
             found a widespread application in different measuring
             instruments, for example in a number of industrial au-
             tomatic potentiometers. In literature, there are des-
             criptions of different versions of input circuits of
             amplifiers working with vibratory converters. However,
             a number of problems are dealt with inadequately or in
             a different manner. Consequently, different authors ob-
             tained different results. Some conclusions and assump-
             tions need a more precise formulation. The author dis-
             cusses one of the most frequently used systems, shown
             in Fig 1. Here E is the direct input voltage. For sim-
             plicity it is assumed that E = 1 and that r is the in-
             ternal resistance of the voltage source, E. The author
Card 1/2   determines the duration of the transient process at

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The Function of a Vibratory Converter in a DC Amplifier

the input circuit and the time required for building
up the output voltage. He also investigates the input
resistance. An experimental investigation of the mean
input resistance value of a circuit with a VP-55 rec-
tifier showed a coincidence with theoretical calcula-
tions within a limit of 2%. The results of this artic-
le make more precise the conclusions reached in other
papers, for example in that of G.I. Levitan /Ref 1/
and by other authors. The method may be useful when
planning direct current automatic measuring instru-
ments, designed for measuring changing voltages and
also for devices with rigid requirements concerning in-
put resistance. There are 1 circuit diagram, 1 graph,
1 table and 2 references, 1 of which is Soviet.

Card 2/2

2'377
S/142/60/003/005/004/015
E192/E382

7.7230

AUTHOR: Nayderov, V.Z.

TITLE: Semiconductor Converter of a Continuous Function
            Into Its Digital Equivalent

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
            Radiotekhnika, 1960, Vol. 3, No. 5, pp. 463 - 473

TEXT: The paper was presented at the Republican Conference
of NTOR n E im. A.S. Popov held at L'vov, December 16, 1959.
The problem of converting continuous information into
equivalent digital representation is of great importance. The
paper is therefore devoted to the problem of investigating
the suitability of transistors in digital-conversion devices.
The system considered is represented in the block schematic
of Fig. 1. The operation of this system is as follows. A
generator of control pulses 1 triggers a device generating
a linearly changing voltage waveform 2 and simultaneously
resets to zero the pulse counter 3 . The voltage from the
linear-waveform generator is applied to two comparison or
discriminator circuits, one of which is actuated when the

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Semiconductor Converter ....

generator waveform reaches a certain level U_o ; the pulse produced by this discriminator opens a gating circuit 4 . The second discriminator circuit is triggered at a level $U_x + U'_o$, where U_x is the voltage which is being converted and U'_o is a voltage near to U_o . The second discriminator 2 produces a stop pulse which closes the gating circuit. These two discriminators are used in order to eliminate the initial portion of the linear waveform where its linearity is generally unsatisfactory and may result in comparatively large errors. The time interval between the start and stop pulses produced by the two discriminators is proportional to the input voltage U_x . During this interval the pulses produced by a stable crystal-controlled pulse generator 5 are applied to the pulse-counter through the gating circuit. It is seen, therefore, that the number of pulses registered by the counter is proportional to the input voltage. One of

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the most important elements in the above system is the linear
voltage generator. An attempt is made to analyse the errors
produced by this device. The basic circuit is given in
Fig. 2, which is a positive voltage feedback device provided
with a compensating RC network (Ref. 2 - V.G. Frolkin,
Indicating Devices, Oborongiz, 1956). The emitter follower
in this circuit is based on two transistors and it has a very
high input impedance, low output impedance and a transfer
coefficient approaching unity. The resistance R_{uu} indicated

by dotted lines represents the parallel combination of the
input impedance of the emitter follower and the impedance of
the switching transistor when it is closed. The source E_3

is used in order to stabilise the transfer coefficient of the
emitter follower. The solution of the differential equation
of the system with respect to U_c is assumed to be in the
form (Ref. 2):

$$U_c(t) = \alpha t + \beta t^2 + \gamma t^3 \qquad\qquad (1) .$$

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The differential equation itself can be written as:

$$\ddot{U}_c(t) + m\dot{U}_c(t) + nU_c(t) = \ell .$$

If it is assumed that the second term of Eq. (1) is zero, i.e. $\beta = 0$, from which it follows that:

$$\alpha m = E_0 \ell \tag{2}$$

Eq. (1) can be written as:

$$U_c(t) = \alpha t (1 - \frac{t^2}{6} n) = \frac{E_0}{RC} t \left[1 - \frac{t^2}{6R_1 C_1 C_0} \cdot \left(\frac{1-k}{R^2} + \frac{1}{R_{00}} \right) \right]. \tag{3}$$

The nonlinear error in this equation is due to the second term and so the equation can be written as

$$U_c(t) = \frac{E_0}{RC} t \left[1 + \Delta_0 \left(\frac{t}{T} \right)^2 \right], \tag{6}$$

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Eqs (3) and (6) are attached to chart 1

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                                   E192/E382

where

$$\Delta_0 = -\frac{T^1}{6R_1 C_1 C_2}\left[\frac{1-k}{R} - \frac{1}{R_{\text{BI}}}\right]^*$$ (6a)

where Δ_0 denotes the error at the end of the operating cycle of the linear voltage generator. The error can also be represented as

$$\Delta_0 = N\delta$$ (7)

where:

$$N = -\frac{1-k}{6}\left(\frac{T}{RC}\right)^2; \quad \delta = \frac{\mu-1}{\mu^3\beta}\left(1+\frac{\xi}{1-k}\right)$$ (7a)

in which the following notation is adopted:
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$\rho = R_1/R$, $\mu = C_D/C$, $\zeta = R/R_0$, $C_n = \mu C/\mu - 1$. Since
the quantities determining N are known, it is possible to
determine the value of δ for a given error Δ_o . μ and ρ ,
as a function of δ , can be expressed as:

$$\mu(\delta) = \frac{\delta(1-k)-s^2}{k^2(1-k)-s^3};$$

$$\rho(\delta) = \frac{s(1-k)[k^2(1-k)-s^3]}{[k^2(1-k)-s^3)]^2} . \qquad .8)$$

where $s = 1 - k + \zeta$. The maximum value of ρ is given by:

$$\rho_{max} = k^2/4s \qquad\qquad (10)$$

which corresponds to $\mu = 2/k$. From the above equations, it
is possible to construct a family of graphs for various values
of k and ζ . From these it is then easy to find the
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Semiconductor Converter .... $3/142/60/003/003/004/015$
$E192/E302$

parameters of the circuit for a given value of the non-linearity coefficient. If the "square" error is not neglected, Eq. (1) can be written as:

$$U_c(t) = at \left\{ 1 - \frac{t}{RC} \left[1 - k + : - \frac{h}{\mu p} + \frac{1}{\mu^4 p} \right] - \frac{t^2}{6} \left(2m \frac{s}{2} - n \right) \right\} . \qquad (12) .$$

It is seen from this equation that the error $\triangle_1$ due to the square terms is primarily dependent on p, p and $R_{\supset}$. The total error is therefore :

$$\triangle_t \leqslant \triangle_0 + \triangle_1 . \qquad (14)$$

The above formulae are used to design a practical circuit and, in particular, to determine its nonlinearity. It is found that with transistors type ... (P403), the total error is about 4×10^{-4}. However, these transistors can only produce an

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Semiconductor Converter S/142/60/003/005/004/015
                                 E192/E382

amplitude of several V and better results are achieved with
high-voltage transistors which give amplitudes of 50 V with
the same nonlinearity. The second important device in the
above digital conversion system is the discriminator circuit.
This is shown in Fig. 4. The discriminator is triggered at the
instant when the voltage from the linear generator becomes
equal to the input voltage U_x ; naturally, the two voltages

are equal within the limits of a prescribed error. The
operation of the discriminator is as follows. Until the
instant of triggering the ratio between the dynamic resistance
of the diodes is such that a cumulative process cannot be
produced in the circuit. However, as the voltage U increases,
the resistance of the upper diode is reduced and that of the
lower diode is increased. At the instant corresponding to
$U = U_x$, the gain of the system in the feedback loop becomes

equal to unity and the circuit operates as a blocking
oscillator except that the circuit of the primary of the
transformer contains the resistance of the upper iode and the

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Semiconductor Converter S/142/60/003/005/004/015
                                 E192/E382

output impedance of the linear generator. The circuit was studied in detail by the phase-plane method and the conditions for securing the blocking-oscillator action when $U = U_x$ were determined. The results of this analysis are represented in Fig. 5, which shows the boundary of the plane of two parameters q, r . In the region I of this plane the discriminator triggers at $|U| < U_x|$, while in region I the triggering takes place at $|U| > |U_x|$. The discriminator circuit was investigated experimentally and it was found that the discrimination level could be reduced to ± 5 mV for temperatures of 20 ± 5 °C. The rise time of the output pulse was of the order of fractions of a μs. The total error in the conversion from continuous function to the digital display is also caused by the fact that discriminator level is $\pm| | / U$. This error can be taken

into account and the resultant total error is represented by:

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Semiconductor Converter S/142/60/003/005/004/015
E192/E382

$$t = /t + t_c = \left[\frac{t}{1_T} + \frac{t}{T}^2 \; t \pm \frac{c}{U_M} \right] T \; .$$

From the above analysis it is concluded that good linearity
can be achieved in the positive-feedback linear voltage
generator if the emitter-follower is based on two transistors.
It is possible to design an effective discriminator or
comparison circuit so that the total conversion error is not
greater than 0.1%.

There are 7 figures and 5 Soviet references, one of which is
translated from English.

ASSOCIATION: Kafedra radiotekhniki L'vovskogo politekhni-
               cheskogo instituta (Chair of Radio-engineering
               of L'vov Polytechnical Institute)

SUBMITTED: March 15, 1960

Card 10/12

VALITOV, R.A.; VIKHROV, G.P.; NAYDEROV, V.Z.

Using electronic pulse meters in measuring equipment. Izm.tekh.
no.5:41-44 My '60.   (MIRA 14:5)
                    (Pulse techniques (Electronics))

NAYDEROV, V.Z.; SIMONOV, Yu.L.

Structural stability of a linear four-terminal network. Elektro-
sviaz' 15 no.4:43-48 Ap '61.   (MIRA 14:9)
(Electric networks)

SIMONOV, Yu.; NAYDEROV, V.

Structural stability of a linear four-terminal network. Elektrosviaz'
16 no.7:71-72 Jl '62.   (MIRA 15:7)
                        (Electric networks)

AKULOV, I.I.; BARZHIN, V.Ya.; VALITOV, R.A.; GARMASH, Ye.N.; KUCHIN,
L.F.; NAYDEROV, V.Z.; PUTSENKO, V.V.; SEMENOVSKIY, V.K.;
SIMONOV, IU.L.; TRIASOV, V.L.; TEREKHOV, N.K.; SHEVYRTALOV,
Iu.B.; YUNDENKO, I.N.; CHISTYAKOV, N.I., otv. red.; KOKOSOV,
L.V., red.; TRISHINA, L.A., tekhn.red.

[Theory and design of principal radio circuits using transistors]
Teoriia i raschet osnovnykh radiotekhnicheskikh skhem na transi-
storakh. [By] I.I.Akulov i dr. Moskva, Sviaz'izdat, 1963. 452 p.
(MIRA 16:8)

(Transistor circuits)   (Electronic circuits)

AKULOV, I.I.; BARZHIN, V.Ya.; VALITOV, R.A.; GAIMASH, Ye.N.;
KUCHIN, L.F.; HAYDEROV, V.Z.; PUTSENKO, V.V.;
SEMENOVSKIY, V.K.; SIMONOV, Yu.L.; TARASOV, V.L.;
TEREKHOV, N.K.; SHEVYRTALOV, Yu.B.; YUNDENKO, I.N.:
CHISTYAKOV, N.I., prof., otv. red.; KOKOSOV, L.V.; red.

[Theory and design of basic radio circuits using
transistors] Teoriia i raschet osnovnykh radiotekhniche-
skikh skhem na tranzistorakh. Moskva, Sviaz', 1964.
                                            (MIRA 18:6)
454 p.

KHAYKINA, A.S.; DUBRAVINA, G.I.; RACHINSKAYA, A.Z.; PETRENKO, M.D.; MITEL'MAN,
P.M.; KHODOROVA, Z.N.; KATS, F.M.; KISELEV, R.I.; GAYDAMAKA, M.G.;
VOLOVICH, B.I.; BEKKER, M.L.; GORDIYENKO, Ye.G.; VYSOCHINENKO, Ye.K.;
TELESHEVSKAYA, M.A.; NAYDEROVA, Yu.T.

Production of the active fraction of hyperimmune horse sera by means
of the alcohol precipitation method under a low temperature. Nauch.
osn. proizv. bakt. prep. 10:159-167 '61.   (MIRA 18:7)

1. Khar'kovskiy institut vaktsin i syvorotok im. Mechnikova.

L 11336-67   EWT(d)/EWT(m)/EWP(k)/EWP(h)/EWP(l)/EWP(v)   FDM/DJ/WE

ACC NR: AP6030626   (A,N)   SOURCE CODE: UR/0413/66/000/016/0122/0122

INVENTOR: Naydich, A. I.; Fateyev, B. V.   /5

ORG: none

TITLE: Fuel supply regulator. Class 46, No. 185154

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 122

TOPIC TAGS: fuel control, fuel flow rate

ABSTRACT: This Author Certificate introduces a fuel supply regulator consisting of a housing with a cylindrical gate valve, which includes a rectangular metering dispenser and a bushing. In order to operate on various types of fuel without changing the metering element's profile, the bushing has several openings. each of which is adapted for two kinds of metering profiles which determine the consumption rate. Orig. art. has: 1 figure.

SUB CODE: 21, 13/ SUBM DATE: 29May64/

Card   1/1   UDC: 621.438-543.3-531.9

1. NAYDICH, D.V.

2. USSR (600)

4. Costume - Bulgaria

7. Clothes of the Bulgarian people as a model of folk art. Material of the 1952 exhibition
Sov.etn. no. 1, 1953.

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

NAYDICH, G. N., CHIGIRIK, E. D., CHUMAK, N.F., PLECHIVTSEVA, E. A.

"Prophylactic methods and local eradication of tick-borne encephalitis in some areas of the kemerovo oblast." Page 82

Desyatoye soveshchaniye po parazitologicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

CHUMAKOV, M.P.; L'VOV, D.K.; SARMANOVA, Ye.S.; GOL'DFARB, L.G.; NAYDICH, G.N.;
    CHUMAK, N.F.; VIL'NER, L.M.; ZASUKHINA, G.D.; IZOTOV, V.K.;
    ZAKLINSKAYA, V.A.; UMANSKIY, K.G.

Comparative study of the epidemiological effectiveness of vacci-
nations with tissue culture and brain vaccines against tick-
borne encephalitis. Vop. virus. 8 nc.3:307-315 My-Je'63.
                                        (MIRA 16:10)

1. Institut poliomyelita i virusnykh entsegalitov AMN SSSR,
Moskva i Kemerovskaya oblastnaya sanitaruo-epidemiologicheskaya
stantsiya..
          (ENCEPHALITIS--PREVENTIVE INOCULATION)

NAYDICH, I. M.

USSR/Chemical Technology. Chemical Products and Their I-13
        Application--Treatment of solid mineral fuels

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9215

Author : Kalyuzhnyy, V. V., and Naydich, I. M.
Inst   : Academy of Sciences Kirgiz SSR
Title   : The High-Speed Gasification of Coal Dust from the
           Dzhergalan and Kok-Yangak Beds

Orig Pub: Tr. in-ta vod. kh-va i energ. AN KirgSSR, 1956,
           No 3 (6), 139-151

Abstract: With a view towards the investigation of the suit-
           ability of Kirgiz coals for high-speed thermal
           treatment by new fluidized bed methods as well
           as for the purpose of obtaining data for the design
           of industrial power plants, experiments have been
           carried out on the rapid gasification of coals in
           apparatus permitting the heating of the coal dust
           in a stream of preheated steam at termperatures
           of 520-628° and contact times of less than 0.01

Card 1/2

Card 2/2

8(6)

AUTHOR: Naydich, I. M., and Grebennikov, V. S.

TITLE: Long-Term Heat Consumption by Frunze City
(Perspektivnoye teplopotrebleniye g. Frunze)

PERIODICAL: Tr. In-ta vodn. kh-va i energ. AS Kirgizskaya SSR, 1957, Nr 4(7),
pp 161-172

ABSTRACT: The problems of supplying electricity, heat, and gas to Frunze City
can be solved in connection with construction of a heat-and-electricity station
in the near future. This necessitates operating the station on the basis of a
complex processing of solid fuel which would permit raising fuel utilization up
to 70-80%. Indexes of city growth are presented, as well as methods for
determining heat consumption by residential, administrative, and community
buildings, by municipal utilities, suburban agriculture, railroad transporta-
tion, and industries. A table on long-range heat consumption is compiled.

Card 1/2

SOV/112-59-2-2588

Long-Term Heat Consumption by Frunze City

Information about carrying the heat loads today is provided. Industry is the largest long-range and present consumer (about 60% of the heat load); it is followed by the residential load (about 20%). A considerable increase in fuel deliveries to Frunze City to satisfy heat requirements is necessary during the next few years as well as in the future, and also in production of electric energy and residential-service gas. Bibliography: 14 items.

M. L. Z.

Card 2/2

Navach. A. M.

BEREZKINA, Z.A.; NAYDICH, I.M.

Briquetting capacity of some coals of Kirghizia and Kazakhstan without using binders. Trudy Inst. vod. khoz. i energ. AN Kir. SSR no.4:173-187 '57.   (MIRA 10:12)
        (Kirghizistan--Briquets (Fuel)
        (Kazakhstan--Briquets (Fuel)

HAYDICH, I.M.

BEKBULATOVA, Kh.I.; HAYDICH, I.H.; SPEKTOROV, L.A.

Mineral content of some lignites of Kirghizia and Kazakhstan.
Trudy Inst. vod. khoz. i energ. AN Kir. SSR no.4:189-194 '57.
                                             (MIRA 10:12)

                    (Kirghizistan--Lignite)
                    (Kazakhstan--Lignite)

8(6)   SOV/112-59-2-2600

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 46 (USSR)

AUTHOR: Naydich, I. M., and Perova, O. A.

TITLE: Capacity and Efficiency of Water-Heating Plants in Kirgizskaya SSR
(Proizvoditel'nost' i koeffitsiyent poleznogo deystviya vodogreynykh ustanovok
v usloviyakh Kirgizskoy SSR)

PERIODICAL: Tr. In-ta vodn. kh-va i energ. AS KirgizskayaSSR, 1957, Nr 4(7),
pp 215-226

ABSTRACT: There are 150-200 sunny days a year in various districts of
Kirgizskaya SSR. With solar radiation intensity around midday of 0.7-1.5
cal/cm^{2}min, the annual amount of solar-radiation heat is over 1,000,000
kilocal/m^2. Utilization of solar energy for water heating is considered as a
necessary step for fuel economy. A standard tube-type (B. V. Petukhov's)
solar water heater with a 1-1/2 glass coverage has the widest usage. Tests
of this helio heater (during August-September, 1955) showed that a water-

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SOV/112-59-2-2600

Capacity and Efficiency of Water-Heating Plants in Kirgizskaya SSR

heating plant with a uniform hot-water (41°C) consumption has an efficiency of 40-53%; another plant with one-shot hot-water (42-50°C) consumption has an efficiency of 33-37%. A 10.5-m^2 plant would save over 6,000 rubles on fuel alone; taking into account the savings on service personnel, this plant would yield an annual saving of over 2,000 rubles over a 15-year period. In 1-2 years, the plant would pay for itself.

B.V.P.

Card 2/2

NAYDICH, I.M.; ZABIROV, R.D.

Study of central Tien Shan; discovery and conquest of Pobeda
Peak. Trudy Otd.geog.i Tian.fiz.-geog.sta.AN Kir.SSR no.1:5-21
'58.   (MIRA 12:2)
                    (Tien Shan)

ALYSHBAYEV, Dzhumagul Alyshbayevich; NAYDICH, Iosif Matveyevich;
     YEROPKIN, Vasiliy Gavrilovich, otv. red.; MAVLYUTOV, R.R.,
     red.; KOLESNIKOV, A.A., tekhn. red.

     [Prospects for developing heavy industry in the Kirghiz
     S.S.R. utilizing the fuel and power resources of the Naryn
     Basin and local mineral resources; problem of the Bol'shoy
     Naryn]O perspektivakh razvitiia tiazheloi promyshlennosti
     Kirgizskoi SSR na baze osvoeniia energeticheskikh resursov
     basseina reki Naryna i me tnogo mineral'nogo syr'ia; problema
     Bol'shogo Naryna. Frunze, Ob-vo po rasprostraneniiu polit.i
     nauchn.znanii Kirgizskoi SSR, 1959. 47 p.   (MIRA 15:11)
                    (Kirghizistan--Industries)
                    (Kirghizistan--Natural resources)

NAYDICH, I.M.; KOZ'MIN, G.V.

Thermal processing of some coals of Kirghizistan and Kazakhstan
in retorts. Trudy Inst.vod.khoz.i energ. AN Kir.SSR no.5:
87-108 '59.   (MIRA 13:5)
           (Coal gasification)

MAYDICH, I.M.; BEREZKINA, Z.A.

Mechanical properties of some coals of Kirghizistan and Kazakhstan. Trudy Inst.vod.khoz.i energ. AN Kir.SSR no.5: 119-130 '59.   (MIRA 13:5)

(Kirghizistan--Coal--Testing)
(Kazakhstan--Coal--Testing)

DZHAMANBAYEV, A.S.; NAYDICH, I.M.

 Some results of rapid heating of Karakichi coal dust. I.AN Kir.SSR.
Ser.est.i tekh.nauk 2 no.7:159-167 '60. (MIRA 14:4)
   (Coal Pulverized) (Furnaces)

NAYDICH, I. M., DZHAMAMBAYEV, A. S. and REBINIKOV, V. S.

"Effect of coal heating rate on its thermal decomposition process."

Report presented at the 1st All-Union Conference on Heat- and Mass- Exchange, Minsk, BSSR, 5-9 June 1961

NAYDICH, I. M., DZHAMBAIBAYEV, A. S., and GREBENNIKOVA, V. S.

"The Influence of the Heating Rate of Coal of the Process
of its Thermal Decomposition."

Report submitted for the Conference on Heat and Mass Transfer,
Minsk, BSSR, June 1961.

NAIDICH, I. M., and KOZ'MIN, G. V.

"Experimental Investigation of Mass Transfer at Pneumatic
Drying of Coat Dust."

Report submitted for the Conference on Heat and Mass Transfer, Minsk,
BSSR, June 1961.

DZHAMGANBAYEV, A.S., inzh.; NAYDICH, I.M., kand.tekhn.nauk, dotsent

Effect of temperature and reaction time on the isothermal decomposition of Kara Kichinsk lignite. Trudy Frunz. politekh. inst. no. 6:41-46 '62.   (MIRA 17:9)

KADYROV, V.K.; NAYDICH, I.M.; AFANAS'YEVSKAYA, S.M.

Mine water in coal deposits in Kirghizistan. Izv. AN Kir. SSR.
Ser. est. i tekh. nauk 4 no.5:117-127 '62.
(MIRA 16:4)

(Kirghizistan--Mine water)

NAYDICH, I.M., kand. tekhn. nauk; MORGULIS, M.L., kand. tekhn. nauk; GAVRILOV, B.A., inzh.

Present-day highly efficient crushing equipment. Stroi. mat. 10 no.2:35-38 F '64.   (MIRA 17:6)

NAYDICH, L. N.

HAYDICH, L.N.

Werking malaria mosquitoes under natural daytime habitat conditions.
Med.paras. 1 paraz.bol.supplement to no.1:24-25 '57.   (MIRA 11:1)

1. Iz Odesskoy gorodskoy protivomalyariynoy stantsii.
   (ODESSA PROVINCE--MOSQUITOES)

HAYDICH, N L.
HAYDICH, N.L.

Detection of Theobaldia (Allotheobaldia) longiareolata Macg. and
Culex modestus Fic. in Odessa. Med.paraz. i paraz.bol. 26 no.4:
483 Jl-Ag '57.   (MIRA 10:11)

1. Iz otdela malyarii i meditsinskoy parazitologii Odesskoy gorod-
skoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach M.A.
Fenko, zav. otdelom M.G.Rozenbaum)
        (ODESSA—MOSQUITOES)

HAYDICH, N.L.

Phenological data on Anopheles maculipennis atroparvus in Odessa.
Med.paraz.i paraz.bolezn. 23 no.1:25-27 Ja-F '59.   (MIRA 12:3)

1. Iz otdela malyarii i meditsinskoy parazitologii Odesskoy gorodskoy
sanitarno-epidemiologicheskoy stantsii (glavny vrach M.Ye. Fenko, zav.
otdelom M.G. Rozenbaum).
          (MOSQUITOES,
                Anopheles maculipennis, phenol. (Rus))

VASHKOV, V.I.; SHNAYDER, Ye.V.; BRIKMAN, L.I.; ZAKOLODKINA, V.I.; CHUBKOVA,
A.I.; ALIMBARASHVILI, TS.N.; BABAYANTS, G.A.; BERIANIDZE, I.Sh.;
ZAKHAROV, P.V.; ISAAKYAN, A.G.; LEVIYEV, P.Ya.; MARTINSON, M.E.;
MRACHKOVSKIY, S.K.; NAYDICH, N.L.; NESTERVODSKAYA, Ye.M.; RAZMANOVA,
Ye.M.; SAVINA, K.V.; SERGEYEVA, A.Ye.; SOKOLOVA, M.Ye.; FOMICHEVA,
V.S.; CHERNYSHOVA, V.A.; SHUMILOVA, T.V.

Sensitivity to DDT of houseflies in various climatic zones of the
USSR. Zhur.mikrobiol., epid.i immun. 33 no.8:20-24 Ag '62.
(MIRA 15:10)

1. Iz TSentral'nogo nauchno-issledovatel'skogo dezinfektsionnogo
instituta.
(FLIES—EXTERMINATION)   (DDT)

VASHKOV, V.I.; SHNAYDER, Ye.V.; ZAKOLODKINA, V.I.; BRIKMAN, L.I.; CHUBKOVA, A.I.
     ALIMBARASHVILI, TS.N.; BABAYANTS, G.A.; BERIANIDZE, I. Sh.;
     ZAKHAROV, P.V.; ISAAKYAN, A.G.; LEVIYEV, P. Ya.; MARTINSON, M.E.;
     MRACHKOVSKIY, S.K.; NAYDICH, N.L.; NESTERVODSKAYA, Ye.M.;
     RAZMANOVA, Ye.M.; SAVINA, K.V.; SERGEYEVA, A.V.; SOKOLOVA, M.Ye.;
     FOMICHEVA, V.S.; CHERNYSHEVA, V.A.; SHUMILOVA, T.V.

     Sensitivity of houseflies to chlorophos prior to its use.
     Zh. mikrobiol. 40 no.7:3-7 Jl'63   (MIRA 17:1)

NAYDICH, N.L.; MRACHKOVSKIY, S.K.

Results of the use of a helicopter in mosquito control in Odessa; an abstract. Med. paraz.   paraz. bol. 33 no.5:616 S-O '64.

(MIRA 18:4)

1. Odesskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya.

1. A. K. BURYLENKO, V. M. DANILENKO, YU V. MIL'MAN, YU V. NAIDICH, S. A. RYBAK, A. A. SMIRNOV

2. USSR (600)

4. Alloys

7. Electrical resistance of well-organized alloys. Zhur eksp. i teor. fiz. 23 no. 6. 1952

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

NAYDICH, Yu.V.

Theory of electrical resistivity of ordered alloys. A. K. Butylenko, V. M. Danilenko, Yu. V. Mil'man, Yu. V. Naidich, S. A. Rybak, and A. A. Smirnov. *Izvest. Kiev. Politekh. Inst.* 12, 18-24(1953); *Referat. Zhur., Fiz.* 1955, No. 9374; cf. *C.A.* 47, 3644e.—Exptl. curves illustrating the relation of elec. resistivity of ordered alloys ρ to compn. and degree of ordering differ from theoretical curves by the presence of rectilinear sections, by sharpness of the max., and in some cases by the rapid discontinuous changes of ρ with compn. If one considers that, at the same temp. for annealing T, the degree of ordering η, attained by alloys of different concns., is not the same, then the exptl. curves can be explained with the aid of known formulas detg. the equil. values of η at given values of T and c (concn.). The favorable effect of the indicated correction is illustrated graphically by a sample of alloys with face-centered and body-centered cubic lattices. It is noted that the skipping of ρ(c) which is sometimes observed when compn. c ≈ 0.5 is approached contradicts the statistical theory of ordering, which is not able to predict whether the order—non-order transitions in a given alloy are of 1st or 2nd order. This work confirms the usefulness of A. A. Smirnov's theory (*C.A.* 42, 8805f) in explaining the basic qual. features of change in ρ with the compn. which are observed in ordered alloys.   M. K.

NAY.ЭICH, Yu.V.

14215*   Differential Magnetic Method for Investigating Steel
and Alloys. Differentsial'nyi magnitnyi metod issledovaniia
stali i splavov. (Russian.) V. G. Pernjakov, Iu. V. Naidich,
and S. A. Rybak. Zavodskaia Laboratoriia, v. 21, no. 6, June
1955, p. 645-604.

Theoretical bases of proposed method for determining degree of
magnetization; sample determination of residual austenite.
Graphs, diagrams. 5 ref.

NAYDICH, Yu. V.: Master Tech Sci (diss) -- "Investigation of the soaking in

liquid metals of the solid surfaces of high-melting compounds". Kiev, 1958.

15 pp (Acad Sci Ukr SSR, Inst of Metalloceramics and Special Alloys), 150 copies

(KL, No 6, 1959, 174)

NAYDICH, Yu V.

18(0)   PHASE I BOOK EXPLOITATION   SOV/2341

Eremenko, Valentyn Nykyforovych, and Yuryy Vladymyrovych Naydych

Zmochuvannya ridkymy metalamy poverkhen' tuhoplavkykh spoluk
   (Wetting the Surface of High-Melting Alloys With Liquid Metals)
   Kiyev, Vyd-vo AN Ukrayins'koyi RSR, 1958. 59 p. 2,000 copies
   printed.

Sponsoring Agency: Akademiya nauk Ukrayins'koyi RSR. Instytut
   metalokeramiky i spetsial'nykh splaviv.

Ed.: I.M. Fedorchenko, Corresponding Member, Ukr. SSR Academy of
   Sciences; Ed. of Publishing House: I.F. Shtul'man; Tech.
   Ed.: N.P. Rakhlina.

PURPOSE: This book is intended for engineers and scientific person-
   nel working in the physical chemistry of molten metals; it may
   also be useful to senior students specializing in this field.

COVERAGE: The author discusses problems of wetting high-melting
   alloys with molten metal, a process used in the manufacture of
   heat-resistant and other materials. Results of experimental
Card 1/3

and theoretical investigations of the wetting process are presented and general thermodynamic principles are described. Published data on capillarity in molten metal are analyzed. No personalities are mentioned. There are 135 references: 63 Soviet, 65 English, and 7 German.

TABLE OF CONTENTS:

Card 2/3

SOV/180-59-2-20/34

AUTHORS: Yeremenko, V.N., and Naydich, Yu.V. (Kiyev)

TITLE: Measurement of the Surface Tension and Density of Liquid Chromium (Izmereniye poverkhnostnogo natyazheniya i plotnosti zhidkogo khroma)

PERIODICAL: Izvestiya akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959,Nr 2,pp 111-112 (USSR)

ABSTRACT: The authors have used a modification of the apparatus they have previously described (Ref 1) to measure the surface tension and density of liquid chromium by the quiescent drop method. The main parts of the apparatus are a vacuum chamber and arrangements for photographing (at a magnification of X 5-7), the drop. The drop dimensions were determined with a measuring microscope and the surface tension and volume of the drops were determined from published tables (Ref 2). After preliminary experiments with helium a purified hydrogen atmosphere was adopted. The results obtained under various conditions at 1950 oC are tabulated. The mean
Card 1/2   value of the density was found to be 6 ± 0.13 g/cm3,

SOV/180-59-2-20/34

Measurements of the Surface Tension and Density of Liquid Chromium

and the mean value of the surface tension
1590 ± 50 erg/cm^2.
There are 1 table and 2 references, 1 of which is Soviet
and 1 English.

SUBMITTED: November 1, 1958

Card 2/2

30665

3/137/61/000/010/018/056
A006/A101

I S 2530

AUTHORS: Yeremenko, V.N., Naydich, Yu.V.

TITLE: Investigating the wetting of solid surfaces of some high-melting
             compounds with liquid metals

PERIODICAL: Referativnyy zhurnal. Metallurgiya. no. 10, 1961, 35, abstract
             100282 ("Byul. In-t metallokeram. i spets. splavov AN UkrSSR", 1959,
             no. 4, 38 - 51)

TEXT: The authors studied the wetting of solid oxides and borides with li-
quid metal. They revealed the connection between the wetting of solid oxides
and their physical-chemical properties. Oxides with a high concentration of free
electrons, i.e. with a higher electric conductivity are better wetted by liquid
metals under equal other conditions. In turn, electric conductivity increases
with a decreasing heat of oxide formation. The wettability of borides with mol-
ten Cu increases with the growth of the ordinal number of the periodic system
of the corresponding transition metal, forming a boride, i.e. with decreasing
metal-B bonds. An analysis of literature data leads to the conclusion that when

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S/137/61/000/010/018/056
A006/A101

Investigating the wetting of solid surfaces ...

wetting metal carbides the s-d-interaction plays the decisive part, and that only transition metals are able to well wet the carbides. There are 19 references;

V. Shulepov

[Abstracter's note: Complete translation]

Card 2/2

S/137/62/000/006/070/163
A052/A101

AUTHOR: Naydich, Yu. V.

TITLE: On the effect of interphase surface energies on wettability

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 32, abstract 6G245
              (In collection: "Vopr. poroshk. metallurgii i prochnosti materialov",
              Kiyev, AN UkrSSR, no. 7, 1959, 39 - 45)

TEXT: The effect of interphase surface energies on the contact angle in
Neumann's equation is discussed. The fallibility of the widespread opinion that
the growth of the surface energy of the solid phase σ_s leads to a better wettabi-
lity (a decrease of the contact angle) is pointed out. The value of σ_s cannot
be a criterion for selecting solid phase material. It is also preferable to
select liquids for impregnation with the lowest σ_l.

                                                R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 1/1

NAYDIN, Yu.V.

The 1L66, 1L67, 1L67a, and 1L69 automatic production lines. Biul.
tekh.-ekon.inform. no.12:13-20 '59. (MIRA 13:4)
(Machine tools) (Automation)

5(2),15(2)

AUTHORS: Yeremenko, V. N., Naydich, Yu. V.   SOV/78-4-9-20/44

TITLE: The Wetting Capacity of the Borides and Carbides by Liquid Metals

ABSTRACT: For producing cermets borides and carbides of transition metals are used as solid phase, which is wetted by liquid metal. Thus, the wetting capacity of the solid phase is of technical significance. A study was made of the diborides TiB_2, VB_2, ZrB_2, NbB_2, TaB_2, CrB_2, and MoB_2, pressed at 2100-2500°, which had been placed at the authors' disposal by G. V. Samsonov. For this the authors express their gratitude. The wetting capacity was determined by measuring the temperature dependence of the wetting angle formed by a metal drop at rest on the boride or carbide in a rare gas atmosphere. For copper the results are given in tables 1, 2, and in figure 1. There exists a certain temperature for every boride, at which the wetting angle begins to diminish rapidly. Results obtained for nickel are outlined. The wetting capacity was found to be lower than that of copper. For elements

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The Wetting Capacity of the Borides and Carbides by   SOV/78-4-9-20/44
Liquid Metals

of the same group, the wetting capacity of their borides grows
with increasing atomic number. Data given in publications on the
system carbide - metal are mentioned in table 3. Two groups of
metals are distinguishable. The one reacts weakly with the carbide
surface, and the other deliquesces on the carbide. All carbide-
dissolving metals (Ni, Co, Fe) belong to the latter group. These
are the transition metals having incomplete d-electron shells.
There are 1 figure, 3 tables, and 12 references, 6 of which are
Soviet.

SUBMITTED: May 26, 1958

Card 2/2

(4)
AUTHORS: Yeremenko, V. N., Naydich, Yu. V.   SOV/76-33-6-11/44

TITLE: Investigation of the Wetting of Solid Surfaces of Difficultly
               Melting Oxides With Liquid Metals (Issledovaniye smachivaniya
               zhidkimi metallami tverdykh poverkhnostey tugoplavkikh okislov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 6, pp 1238-1245
               (USSR)

ABSTRACT: Molten metal is used as a binding agent for the high-melting
               oxides and carbides in the production of cermets. Therefore,
               the wettability (W) of cermets by molten metal is of
               particular importance. It may be assumed that the (W) of the
               semiconductor is the greater, the higher its electrical
               conductivity is. In the work under review this relationship
               was investigated in the systems: $Mg - NiO$, $MgO - CoO$, $Al_2O_3 -$
               Cr_2O_3, $MgO \cdot Cr_2O_3 - Fe_3O_4$. Tin, aluminum (99.99 % Al), copper
               (99.99 % Cu), nickel (99.99 % Ni) and Armco iron were used as
               binding agents. Experiments were made with a specially
               designed apparatus (Fig 1) in vacuum and argon atmosphere at
               temperatures of up to 1550°. All systems investigated reveal
Card 1/3   that the (W) increases in parallel with the electrical

Investigation of the Wetting of Solid Surfaces of   SOV/76-33-6-11/44
Difficultly Melting Oxides With Liquid Metals

conductivity. The wetting angle measured changes markedly e.g. in the system (Mg, Ni)O - Sn from 150° to 10-20°. Considerations are made concerning the chemical reaction at the phase boundary, and a computation of the surface energy between the phases is carried out. It is assumed that the electrons of conductivity participate in the molten metal wetting phenomena concerning the oxides. A relationship was found between the electrical conductivity of the oxides and their thermodynamic stability (of the formation heat). The computed results concerning the wetting angle of liquid metal on the oxide surface are compared with experimental data and they are shown to agree with respect to the order of magnitude. The computation, however, must be worked out with a still greater accuracy. There are 3 figures and 14 references, 6 of which are Soviet.

ASSOCIATION: Akademiya nauk USSR, Institut metallokeramiki i spetsial'nykh splavov (Academy of Sciences of the UkrSSR, Institute of Powder Metallurgy and Special Alloys)

Card 2/3

Investigation of the Wetting of Solid Surfaces of
Difficultly Melting Oxides With Liquid Metals

SOV/76-33-6-11/44

SUBMITTED: October 16, 1957

Card 3/3

NAYDICH, Y. V.

The wetting of refactory compounds with liquid metals, USSR, by
V. N. Yeremenko and Y. V. Nadich. New York, USJPRS, 1960.
110 p. illus, graphs, tables. (JPRS: 5006)
Translated from the original Ukrainian: Zmochuvannya ridkymy
metalamy poverkhen' tugoplavkykh spoluk. Kyyiv, 1958.
Bibliography: p. 103-110.

YEREMENKO, V.N.; NAYDICH, Yu.V.; NOSONOVICH, A.A. (Kiyev)

Surface activity of oxygen in liquid copper-oxygen alloys. Zhur. fiz.khim. 34 no.5:1018-1020 My '60. (MIRA 13:7)

1. Akademiya nauk USSR, Institut metallokeramiki i spetsial'nykh splavovi i Kiyevskiy godudarstvennyy universitet im. T.G. Shevchenko.
(Copper--Oxygen alloys) (Surface tension)

YEREMENKO, V.N.; NAYDICH, Yu.V.; NOSONOVICH, A.A. (Kiev)

Interphase activity of oxygen in the systems liquid metal - solid oxide. Zhur.fiz.khim. 34 no.6:1186-1189 Je '60.
(MIRA 13:7)

1. Akademiya nauk USSR, Institut metallokeramiki i spetsial'nykh splavov i Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko.
(Copper-oxygen alloys) (Wetting)

YEREMENKO, V.N. (Kiyev); NIZHENKO, V.I. (Kiyev); NAYDICH, Yu.V. (Kiyev)

Surface tension of certain molten intermetallides. Izv. AN.
SSSR. Otd. tekh. nauk. Met. i topl. no.3:150-154 My-Je '61.
(MIRA 14:7)
1. Institut metallokeramiki i spetsial'nykh splavov AN USSR.
(Surface tension) (Intermetallic compounds)

S/137/62/000/007/015/072
A052/A101

AUTHORS: Naydich, Yu. V., Kolesnichenko, G. A.

TITLE: Investigation of wetting graphite and diamond by molten metals and alloys. 1. Contact angles of some transition and non-transition metals on graphite. The wetting of graphite by copper-chromium alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1962, 45, abstract 70311 ('Poroshk. metallurgiya', no. 6, 1961, 55 - 61; English summary)

TEXT: The results of measuring contact angles and of calculating the adhesion work at the wetting of graphite by molten metals and their alloys (Cu, Ag, Sn, Al, Ni, Co, Fe, Pd and other) are described. Non-transition metals do not wet graphite with the exception of Al and Si forming carbides. Transition metals wet graphite well, forming contact angles of 50 - 70°, the adhesion work in this case being 1,500 - 3,000 erg/cm^2. This fact is connected with the structure of d-shells. The experiments have shown that the saturation of Fe, Ni, Co and Pd with carbon results in the increase of contact angles. Also concentra-

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Investigation of wetting graphite and...

tion, temperature and time dependences of wetting graphite by Cu-Cr alloys were studied. Additions of 5 - 10% Cr increase considerably the degree of wetting graphite by copper; these alloys are worth testing as matrix binding of diamond drilling tools. The wetting of diamond is similar to that of graphite.

R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 2/2

S/180/61/000/006/010/020
E073/E535

AUTHORS: Yeremenko, V.N. and Naydich, Yu V. (Kiev)

TITLE: Surface tension of molten rhodium and palladium

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
            tekhnicheskikh nauk. Metallurgiya i toplivo.
            no.6, 1961, 100-101

TEXT   The authors determined the surface tension and the
density of rhodium and palladium by the large drop method in a
vacuum of 5×10^{-5} mm Hg at the fusion temperatures, i e.
1554 °C for Pd and 1966°C for Rh.   In the experiments a high
temperature furnace with an open 1 mm diameter tungsten wire
winding was used.   The cup and base used for the experiments
were made of beryllium oxide in the case of Rh and of aluminium
oxide in the case of Pd.   The diameter of the top edge of the cup
was about 15 mm.   The surface tension and the volume of the drop
were determined by photographing the molten drops and measuring
their maximum diameter, height and angle of contact   At the
fusion temperature (1966°C) Rh has a density of 10 05 $\pm$ 0.3 g/cm^3
and a surface tension of 1940 $\pm$ 50 erg/cm^2 (wherein the errors in
Card 1/2

Surface tension of molten ...   S/180/61/000/006/010/020
                                       E073/E535

the measured density are taken into consideration). Pd at the
fusion temperature (1554°C) has a surface tension of
1470 ± 10 erg/cm^2 and the density estimated according to
empirical formulae was 10.7 g/cm^3. There are 1 table and
5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The English-
language reference reads as follows: Ref.4: Bashfort B.A An
attempt to test the theories of capillary action. Cambridge, 1883

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov
                AN UkrSSR
                (Institute of Cermets and Special Alloys AS UkrSSR)

SUBMITTED: January 18, 1961

Card 2/2

NAYDICH, Yu. V.; YEREMENKO, V.N.

"Large drop" method for the determination of the surface
tension and density of molten metals at high temperatures.
Fiz. met.i metalloved. 11 no.6:883-888 Je '61.   (MIRA 14:6)

1. Institut metallokeramiki i spetsial'nykh splavov AN USSR.
                (Surface tension)
            (Metals in high temperature)

NAYDICH, Iu.V.; YEREMENKO, V.N.; FESENKO, V.V.; VASILIU, M.I.; KIRICHENKO, L.F.

Temperature dependence of the surface tension of liquid cooper. Zhur.
fiz. khim. 35 no.3:694-695 Mr '61.   (MIRA 14:3)

1. Institut metallokeramiki i spetsial'nykh splavov.
            (Surface tension)   (Copper)

YEREMENKO, V.N.; NAYDICH, Yu.V.; LAVRINENKO, I.A.

    Studying compaction processes during sintering in presence of
    a liquid phase. Porosh.met. 2 no.4:72-83 Jl-Ag '62.
                                                              (MIRA 15:8)
    1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.
                (Sintering)   (Dilatometry)

33278
S/078/62/007/002/004/019
B119/B110

I8 7540

AUTHORS: Naydich, Yu. V., Yeremenko, V. N., Kirichenko, L. F.

TITLE: Surface tension and density of liquid alloys of the copper-
             aluminum system

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 2, 1962, 333 - 336

TEXT: Surface tensions and densities of Cu-Al alloys of varying mixing
proportions were studied. The alloys were fused in crucibles of pure over-
burned and recrystallized aluminum oxide, in which also the further tests
were made. Surface tension was measured by a method elaborated by the
first two authors (Ref. 9: Fizika metallov i metallovedeniye, $\underline{11}$(5), 683
(1961); Ref. 11: Zmochuvannya ridkimi metallami poverkhen' tugoplavkikh
spoluk, Izd. AN USSR, Kiyev, 1958), in which particularly large and strictly
symmetrical drops of the test substance are used; thus, the error in
measurement is significantly reduced. The density of the melts was deter-
mined from the volume of the drop (ascertained from the ratio $d/2h$, where
d is the equatorial diameter and h the height of the drop on d, and with
the aid of a table of F. Bashfort et al. (see below)) and from its weight.

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S/078/62/007/002/004/019
B119/B110

Surface tension and density...

Measurements were made in vacuo ($1 - 2 \cdot 10^{-5}$ mm Hg) between 700 and 1250°C.
Results: The temperature coefficient of the density of the alloys is
strongly dependent on the Cu-Al mixing ratio (maximum $d\rho/dT$ at ~95% by
weight Al). The isotherm of the specific volumes of the alloys (measured
at 1100°C) shows that fusion of the components results in volume contrac-
tion owing to chemical interaction. The surface tension of the alloys de-
creases isothermally (measured at 1100 and 1250°C) with increasing Al con-
tent. (Surface tension of Cu at the temperatures indicated ~1320 - 1350
erg/cm^2, of Al ~800 erg/cm^2). In accordance with the stoichiometric pro-
portion of CuAl$_3$, the isotherms of the alloys show a break after which the
surface tension decreases very rapidly with increasing Al content. For
the isotherm at 1250°C the break becomes less sharp owing to the increasing
dissociation of Cu$_3$Al at elevated temperatures. According to the

classification of N. A. Trifonov (Ref. 14: V. Ya. Anosov, S. A. Pogodin.
Osnovnyye nachala fiziko-khimicheskogo analiza. Izd-vo AN SSSR, 1947
(Principles of physicochemical analysis. Published by AS USSR, 1947)) the
isotherm of the surface tension of the Cu-Al system belongs to the third
type, i. e., the Cu$_3$Al compound formed is surface-active as to one

Card 2/3

Surface tension and density...

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component (Cu), but surface-inactive as to the other (Al). The following
papers are mentioned: Yu. A. Klyachko (Ref. 5: Zavodsk. laboratoriya,
6, 1376 (1937)); S. V. Sergeyev and T. I. Khomchenovska (Ref. 6: Fiziko-
khimicheskiye svoystva metallov, Oborongiz, 1952); V. N. Yeremenko,
V. I. Nizhenko, N. Levi, B. B. Bogatyrenko (Ref. 16: Ukr. khim zhurn
(in print)). There are 4 figures and 16 references: 13 Soviet and 3 non-
Soviet. The reference to the English-language publication reads as follows:
F. Bashfort, I. Adams. An attempt to test theories capillary action,
Cambridge, 1883.

ASSOCIATION: Institut metallokeramiki spetsial'nykh splavov Akademii nauk
USSR (Institute of Powder Metallurgy and Special Alloys of
the Academy of Sciences UkrSSR). Kiyevskiy gosudarstvennyy
universitet (Kiev State University)

SUBMITTED: February 13, 1961

Card 3/3

NAYDICH, Yu.V.; LAVRINENKO, I.A.

Investigating capillary cohesive forces between solid particles
with an interlayer of liquid at the contact. Part 2: Effect of
the degree of wetting. Porosh. met. 5 no.10:61-66 0 '65.
(MIRA 18:11)

1. Institut problem materialovedeniya AN UkrSSR.

L 21303-66   EWP(e)/EWT(m)/EPF(n)-2/EWP(t)   IJP(c)   JD/WW/JG/WH

ACC NR: AP6007293   SOURCE CODE: UR/0226/66/000/002/0097/0099

AUTHOR: Naydich, Yu. V.; Kolesnichenko, G. A.

ORG: Institute of Problems of Metal Science AN UkrSSR (Institut problem materialo-
vedeniya AN UkrSSR)

TITLE: Investigation of wetting of diamonds and graphite by fused metals and alloys.
IV. Effect of temperature on adhesion of metals inert to carbon

SOURCE: Poroshkovaya metallurgiya, no. 2, 1966, 97-99

TOPIC TAGS: diamond, graphite, liquid metal, Van der Waals force

ABSTRACT: The authors investigate the wetting of graphite with copper in the tem-
perature range of 1100—1500C and with gallium at 100—1000C, as well as the wetting
of diamond with indium and lead at 300—1150C in vacuum. The work of adhesion of
these metals to diamond and graphite is calculated for all temperatures. It is
shown that the marginal angles θ and the work of adhesion W_a do not practically
vary with temperature. The molar work of adhesion of the investigated liquid metals
to diamond and graphite is evidently due to forces of the Van der Waals type. Orig.
art. has: 2 tables and 2 figures. [Author's abstract.]

SUB CODE: 11/ SUBM DATE: 16Jun65/ OIRG REF: 003/

Card 1/1

NAYDICH, Yu.V.; YEREMENKO, V.N.

Wetting hard surfaces of certain high-melting point compounds
with liquid metals. Vop.por.met.i prochn.mat.   no.6:53-64
'58.   (MIRA 13:4)

(Powder metallurgy)

KAIDICH, Yu.V.

Effect of interphase surface energy on wettability. Vop. por. met.
1 prochn. mat. no.7:39-45 '59.   (MIRA 14:2)
        (Ceramic metals)   (Surface energy)

8156a

s/076/60/034/06/05/040
B015/B061

5,4400

AUTHORS: Yeremenko, V. N., Naydich, Yu. V., Nosonovich, A. A. (Kiyev)

TITLE: The Interface Activity of Oxygen in Liquid Metal - Solid
              Oxide Systems

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 6,
              pp. 1186-1189

TEXT: The wettability of the surface of aluminum oxide and magnesium
oxide with copper - oxygen melts was examined (Table, composition of
melts from 0.0 to 3.4 at% oxygen). The degree of wetting was determined
from the angle of contact (which depends on the interface surface
energies). The angle of contact was measured photographically on drops
of the metal melt resting on the oxide, in a special vacuum apparatus
(Ref. 5) in argon atmosphere at 1150°C. Experiments with the system
$Cu(O_2)-Al_2O_3$ showed that the oxygen present in copper greatly increa
the wettability of the oxide with copper. With the help of the Gibbs
equation it was calculated that the oxygen adsorption on the interface

Card 1/2

The Interface Activity of Oxygen in Liquid
Metal - Solid Oxide Systems

S/076/60/034/06/05/040
B015/B061

of the metal melt-Al_2O_3 passes through a maximum at an oxygen content
of about 1 at% (Fig. 4). Data on the excess concentration of the oxygen
bound to the surface of the oxide indicate that the latter is adsorbed
at lattice junctions where the aluminum ions are, causing the adsorp-
tion of an oxygen ion on an aluminum ion. Similar statements were made
with the system $Cu(O_2)-MgO$, where the wettability of copper on
magnesium oxide by oxygen is not so greatly increased as in the case of
Al_2O_3. There are 4 figures, 1 table, and 8 references: 3 Soviet,
3 American, 1 German, and 1 British.

ASSOCIATION: Akademiya nauk USSR Institut metallokeramiki i spetsial'nykh
splavov (Academy of Sciences UkrSSR, Institute for Powder
Metallurgy and Special Alloys). Kiyevskiy gosudarstvennyy
universitet im. T. G. Shevchenko (Kiyev State University
imeni T. G. Shevchenko)

SUBMITTED: June 30, 1958

Card 2/2

MAYDICH, Yu.V.; KOLESNICHENKO, G.A.

Investigating the wetting of graphite and diamond by molten
metals and alloys. Porosh.met. 1 no,6:55-61 N-D '61.
(MIRA 15:5)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.
    (Powder metallurgy)   (Wetting)

ACCESSION NR: AT4030797   S/0000/63/000/000/0119/0124

AUTHOR: Yeremenko, V.N.; Naydich, Yu.V.; Vasiliu, M.I.

TITLE: Surface tension and density of liquid alloys of the Co-Sn system

SOURCE: AN UkrSSR. Institut metallokeramiki i spetsial'ny*kh splavov. Poverkhnos-
tny*ya yavleniya v rasplavakh i protsessakh poroshkovoy metallurgii (surface phen-
omena in liquid metals and processes in powder metallurgy). Kiev, Izd-vo AN UkrSSR,
1963, 119-124

TOPIC TAGS: surface tension, density, cobalt based alloy, tin containing alloy,
aluminum oxide, high temperature

ABSTRACT: The authors developed a method of determining the density of liquid metals
at high temperatures. This work was done in an aluminum oxide crucible heated to a
maximum temperature of 1900°. The results were presented in graphs and compared with
published data. The accuracy of the density method was 0.3%. Density of liquid
alloys in the Co-Sn system was determined at a temperature of 1550°C. The surface
tension of the Co-Sn alloy system was measured. The isotherm of the surface tension
of the Co-Sn system at 550°C had a continuous path. Orig. art. has: 4 figures, 2

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ACCESSION NR: AT4030797

tables, and 2 formulas.

ASSOCIATION: Institut metallokeramiki i spetsial'ny*kh splavov AN UkrSSR(Institute of Powder Metallurgy and Special Alloys of the AN UkrSSR)

SUBMITTED: 23Nov63

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: ML

NO REF SOV: 007

OTHER: 004

Card 2/2

ACCESSION NR: AT4030801   S/0000/63/000/000/0158/0166

AUTHOR: Naydich, Yu. V.; Kolesnichenko, G. A.

TITLE: A study of graphite and diamond wetting by liquid metals

SOURCE: AN UkrSSR. Institut metallokeramiki i spetsial'ny*kh splavov.
Poverkhnostny*ye yavleniya v rasplavakh i protsessakh poroshkovoy metallurgii
(Surface phenomena in liquid metals and processes in powder metallurgy). Kiev,
Izd-vo AN UkrSSR, 1963, 159-166

TOPIC TAGS: graphite, diamond, transition element, adhesion active element,
wetting agent, wetting agent alloying, liquid phase contact behavior, metal
wetting

ABSTRACT: High-purity graphite linings and domestic diamond crystals (1 to 2
carats, Yakut bed) were studied in a purified hydrogen atmosphere or a vacuum
(10^{-5} mm Hg) for wetting behavior of 22 elements (see Table 1 in the Enclosure)
in the liquid phase. Results indicate that graphite and diamonds are subject to
intensive wetting by all of the tested transition elements and a number of carbide-
forming non-transition elements (Al, Si, B). Non-transition elements which do
not form compounds with C do not wet the diamond or graphite surface. The wetting

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ACCESSION NR: AT4030801

is greatly enhanced by small admixtures of active transition metals (Cr, Ti, V) to inert non-transition elements (Cu, Ag, Sn, etc.), with adhesion at the interface increasing 5-10 times. Adhesion activeness and wettability are also estimated theoretically for numerous elements not subjected to experimental study. Orig. art. has: 2 tables, 5 graphs, and 2 illustrations.

ASSOCIATION: Institut metallokeramiki i spetsial'ny*kh splavov AN UkrSSR, Kiev (Institute of Powder Metallurgy and Special Alloys, AN UkrSSR)

SUBMITTED: 23Nov63   ENCL: 02   SUB CODE: MT, MM

NO REF SOV: 003   OTHER: 004

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ACCESSION NR: AT4030801

ENCLOSURE: 01

Metal	Graphite		
	t °C	θ°	W, erg/cm²
Cu	1100	140	316
Ag	950	136	255
Au	—		
Ge	—		
Sn	800		
Si	900	136	94
Al	900	140	105
Cu+2B	800	143	84
Cu+20 Sn	1100	156	45
Cu+10 Sn	—	149	95
Pb	—		
Bi	—		
Sb	1150	157	68
In	800	140	1720
Sn			3040
Fe	1450	0	2704
Co	1550	50	2550
Ni	1550	57	2138
Pd	1560	65	2640
Cu++10 Ti	1560	48	2560
Cu++10 Cr	1150	5	2640
Cu++5 Cr	1200	0	2395
Cu++0.5 Cr	1200	18	1760
Cu++0.3 Cr	1200	70	—
Cu++5 V	1240	53	2130
Cu++5 Nb	—		1763
Cu++50 Mn	1240	71	2613
Cu++20 Mn	1200	10	1760
Cu++5 Zr	1200	70	2150
Cu++5 Ti	1255	40	1802
Ag++2 Ti	1250	0	—
Ag++5 Ti	1000		1830
Sn++1 Ti	—	55	989
Sn++0.5 Ti	1000	24	930
(Cu+10 Sn)+3Ti	1150	14	1042
(Cu+20 Sn)+2Ti	1150	10	1094
Cu+5 Ni	1150	16	307
Cu+5 CO	1300	138	335

(continued in enclosure #2)

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ACCESSION NR: AT4030801   ENCLOSURE: 02

Diamond			
t, °C	θ°	W, erg/cm²	
1150	145	235	Atmosphere
1000	120	455	
1150	150	22	
1150	116	350	
1150	125	102	Vacuum
1150	138	192	
900	120	180	
1000	110	184	
1150	130	193	
1150	130	235	
800	35	2364	
1150	80	115	
1150	0	2650	Hydrogen Vacuum
1150	23	238	
1150	37	250	
1000	3	1817	
1000	45	1553	
1150	50	893	
1150		1050	
1150		1100	

(continuation of enclosure #1)

Card   4/4